Notebook Computer

Service Manual

8500V Series

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Part 1: Introduction and Specifications

The model 8500V notebook computer supports up to an 800MHz Intel Pentium!!! processor. The 8500V features a 15.0" TFT LCD panel and one bay for a removable FDD module, which is interchangeable with a Zip 250MB Drive or secondary IDE HDD. This product also features one bay for a removable CD-ROM, which is interchangeable with a DVD-ROM or CD-RW Drive.

Specifications

Structure

- Full PC 99 Compliant
- ACPI 1.0B Compliant

Security

- Kensington® Lock

Processor

- Intel Pentium III 500/533/550/600/650/667/700/733/750/800/850/866/933 MHz (FC-PGA 370 Package)

Memory

- Provides 64 bit data bus system memory
- Expandable memory up to 512 MB, depend on 32/64/128/256 MB SODIMM Module
- Two PC-100 or PC-133 compliant 144-pin SODIMM sockets, support Sync DRAM SODIMM (3.3V)

BIOS

- One 256KB Flash ROM
- Phoenix BIOS with Smart Battery, Plug and Play (1.0a), ACPI 1.0B

LCD

- 15.0” XGA(1024 x 768) /SXGA+(1400 x 1050) TFT LCD panel (18bit)

Display

- AGP 2X
- 128-bit Hardware 2D Accelerator Graphics Engine
- Hardware 3D Accelerator Graphics Engine

- Motion Compensation and IDCT for DVD playback Acceleration
- High quality TV-out with MacroVision® V7.01 anti-copy technology
- 8 or 16MB Video memory
- CRT resolution up to 1600x1200 x16M non-interlaced
- TV resolution 1024x768 x 32bpp
- DuoView display capability under Windows 98
- Supports external Video Input

Storage

- Removable 3.5" 3-mode FDD, interchangeable with a 15 mm (h) Zip 250MB Drive (IO MEGA), or 2.5” 12.7mm(h) / 12.5mm(h) secondary IDE HDD
- Removable 24X speed CD-ROM, interchangeable with DVD-ROM or CD-RW
- Removable 2.5" 9.5mm/ 12.7 mm/ 17.0 mm (h) HDD
- Support DMA mode 2/ PIO mode 4/ ATA-33 /ATA-66 IDE HDD

Audio

- AC 97 Compliant
- Compatible with Sound Blaster Pro™
- HRTF 3D Positional Audio, DirectSound and DirectSound 3D Acceleration
- AC-3 Virtualization
- S/PDIF output for DVD content
- IIS interface for external ZV port or MPEG audio
- Built in microphone
- 2 built in 2 watt speakers

Keyboard

- 101/102 Key Win 95 keyboard includes numeric keypad

PCMCIA

- Two (PCI) PCMCIA 3.3V/5V sockets, type II x2 or type III x1
- Supports Zoomed Video Port / CardBus (PC Card95)

Interface

- Built in Touchpad (PS/2)
- IEEE 1394 port
- Dual USB port
- One serial port (COM1)
- One parallel port (LPT1) , support ECP / EPP 1.7and 1.9
- Fast Infrared (FIR) file transfer, IrDA 1.1 or ASKIR (SHARP standard)
- One External CRT monitor port.
- One S-Video jack for TV output
- One RCA jack for Video input
- One PS/2 port for External keyboard or Mouse (PS/2 type)
- One jack for line-in /speaker out
- One speaker-out jack
- One jack for microphone / S/PDIF output
- One RJ-11 jack for 56K MDC Modem
- One RJ-45 jack for 100M/10M LAN
- One (120 pins) connector for Port Replicator
- DC-in jack

Communication

- Wireless Infrared transfer IrDA 1.1, 1cm~1M operating distance, 4Mbps FIR
- 56K MDC Modem with V.90 compliant
- 100M/10M LAN

PMU

- Supports ACPI v1.0B
- Supports APM v1.2 Soft Off
- Device Power Management
- CPU over temperature protection
- Supports suspend to disk
- Battery low suspend
- Resume from alarm time/ modem ring (COM port Only)
- Smart Fan Control

Power

- Full Range 65 watts AC adapter – AC in 100~240V,47~63Hz.
- One Smart Lithium-Ion Battery

Indicator

- LED with AC-IN / HDD Accessing / Battery Charge / Suspend indicator

Certificate

- FCC Class B , CE, VCCI, CTICK, UL, CUL, TUV, CB
- Windows Logo, Macrovision, CTR21, Part 68
- Environmental

Spec.

- Temperature — Operating: 5^0 C~ 35^0C; Non-Operating : -20^0C ~ 60^0C
- Relative Humidity — Operating : 20% ~ 80%; Non-operation: 10% ~ 90%

Physical

- 358(w) x 280(d) x 50(h) mm^3

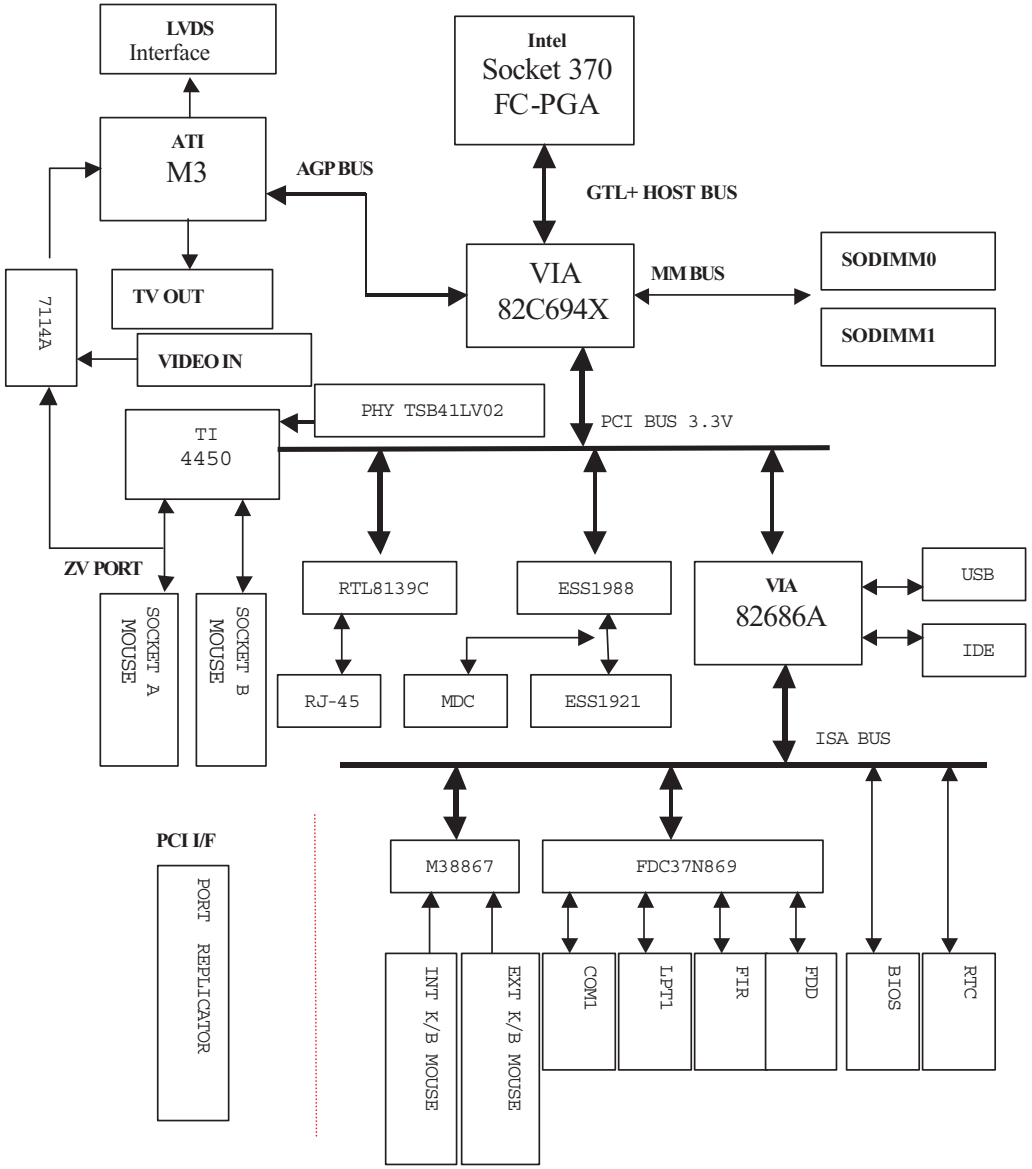
Weight

- 4.2 kg with Lithium-Ion battery

Optional

- 3002 Lithium-Ion smart battery pack
- 8006A Port Replicator
- 8007 IO Mega 100 MB ZIP Drive
- 800D DVD-ROM Driver Module 12.7mm (h)
- 800E CD-RW Driver Module 12.7mm (h)
- 800F Software DVD Player
- 800J 56K Modem Module (MDC) with V.90 compliant
- 800I IO Mega 250MB Zip Drive
- 800H 9000mAh Lithium-Ion Battery Pack

Part 2: Chipsets and Mainboard



Mainboard

The mainboard is designed with ***Intel 370 Socket*** processor base and includes the following CHIPSET functions:

- 82C694X North bridge chipset solution from VIA
- 82C686A South bridge chipset solution from VIA
- ***ATI 3D RAGE Mobility-128*** Multimedia Flat Panel Controller
- ***TI*** 4450 PC CARD Controller
- FDC37N869 super I/O Floppy Disk Controller
- ES1988 PCI Audio Chip and ES1921 AC97' CODEC
- 7114A Video-in decoder
- M38867(Version 1.44) Keyboard Controller
- TSB41LV02 PHY for IEEE1394
- Realtek RTL8139c Controller for 10/100 Mbps LAN

Microprocessor

Intel Pentium!!! processor product line. Features include:

- P6 core (FC-PGA package)
- Separated 16K instruction and 16K data level one caches
- Integrated 256K second level cache
- 4GB of system memory which can be cached
- High performance Floating Point Unit
- Enhanced 64 bit data bus
- Dynamic Execution micro-architecture
- MMX media technology instruction
- Power management features
- Low power GTL+ Host bus specification

82C694X Host Bridge System Controller

VIA's 82C694X Host Bridge system controller is a highly integrated device that combines the processor bus controller, the DRAM controller, and the PCI bus controller into one component. The 82C694X Host Bridge has multiple power management features:

- Host Interface
- Memory Interface
- PCI Interface
- AGP Interface

Southbridge Chip - VIA 82C686A

Contains the following features:

- Supported Kits for both PentiumII and Pentium!!! microprocessors
- Multifunction PCI to ISA Bridge
    + Supports PCI at 33 MHz
    + Supports PCI Rev 2.1 Specification
    + Supports Full ISA or Extended I/O BUS
- Ultra-low power for Mobile Environment Support
- Full Support for ACPI (Advanced Configuration and Power Interface) Revision 1.2
- Integrated IDE Controller Support Ultra DMA/33/66
    + Supports two 82C37 Enhanced DMA Controller
    + Supports two 82C59 Interrupt Controller
    + Supports 82C54 Timer Based
    + Supports UHCI V1.1 USB Ports
    + Supports SMBus

VGA Controller – *ATI 3D RAGE Mobility-128*

The *ATI 3D RAGE MOBILITY-128* Multimedia Flat Panel Controller is a DRAM based fully integrated LCD, CRT & TV 64 bits controller for AGP systems. It contains the following functions:

- Supports displays for 8 MB or 16 MB
- 64 bit high performance 2D/3D Graphic Engine
- Supports bus master AGP and SGRAM memory
- Supports 24 bit TFT panels up to 1280x1024 resolution
- Supports non-interlaced 1600x1200x64k, 1280x1024x64k, 1024x768x16M, 800x600x16M and 640x480x16M color on CRT
- Simultaneous display in 24 bit color on flat panel and CRT
- Internal buffer provides flicker reduction
- *ATI 3D RAGE MOBILITY-128 DAC* can directly interface with a standard off-the-shelf NTSC/PAL encoder. Composite synchronization signals support for standard home TV connection up to 1280x1024x16M and 16:9 Wide mode
- Graphic functions optimized by a 64 bit internal data bus and VGA, SVGA and XGA flat panel
- Provide flexible and extensive power management capabilities and support four states of VESA Display Power Management Signaling Standard
- IDCT for DVD playback acceleration
- Fully compliant ZV-port interface with device driver supports for VPM
- Motion compensation

PC Card (Card Bus) Interface Controller - TI-4450

TI Card Bus Interface Controller 4450 implements the PCMCIA 2.0/JEIDA 4.1 standard. It contains the following functions:

- Supports 2 PCMCIA 2.1& JEIDA 4.2 R2 cards or 2 CardBus cards
- Yenta Registers-compatible
- Supports Zoom Video Mode
- PCMCIA dual-socket interface
- Supports Ultra Zoomed Video Ports

- Bus Master Transfer capability
- Supports both 5V and 3.3V PC cards
- Supports PCMCIA_ATA Specification
- Supports Advanced Submicron Low Power CMOS Technology
- ACPI 1.0 Compliant
- 256 pin Micro-Star BGA package
- OHCI Link Function is IEEE 1394-1995 Compliant and compatible with Proposal 1394

ZV Port Custom Interface

The ZV (Zoomed Video) Port is a single source, point-to-point unidirectional video bus between a PC Card socket and a VGA controller. The ZV Port complies with CCIR601 timing to allow NTSC decoders to deliver real-time digital video straight into the VGA frame buffer from a PC Card. The ZV Port also allows an industry standard mechanism for transferring digital audio PCM data to a low cost DAC for conversion to an analog signal.

Super I/O Floppy Disk Controller – FDC37N869

The SMC FDC37N869 super I/O is optimized for mainboard applications. It provides:

- Intelligent Auto Power Management
- 16 Bit Address Qualification
- 1.44MB Super I/O Floppy Disk Controller
    + Support Vertical Recording Format
    + 16 Byte Data FIFO
    + Enhanced Digital Data Separator (Data rate up to 1Mb/s)
- Multi-Mode Parallel Port with ChiProtect Circuitry
    + Standard Mode
        IBM PC/AT and PS/2 compatible bidirectional parallel port
    + Enhanced Mode
        Enhanced Parallel Port (EPP) Compatible

+ High Speed Mode

Microsoft and Hewlett Packard Extended Capabilities Port (ECP) Compatible

Serial Port

- Two high speed NS16C550 compatible UARTs with Send/Receive 16 Byte FIFOs
- Programmable Baud Rate Generator
- Modem Control Circuitry
- Infrared-IrDA, HPSIR, ASKIR, Fast IR(4Mbps IrDA), Consumer IR Support

High Performance PCI Audio Chip - ES1988

- 500-MIPS-equivalent, dual-engine PCI audio accelerator
- HRTF 3-D positional audio acceleration
- 64 Channel wavetable synthesis
- Advanced platform for interactive 3-D gaming, DVD movie playback and internet communications
- Full plug and play
- Multi-Stream DirectSound and DirectSound3D acceleration
- Full DOS Game compatibility
- I2S Zoomed Video interface

Audio CODEC ES1921

- Single, high-performance, mixed-signal, 16 bit stereo VLSI chip
- Meet Audio Codec '97 analog performance specification
- Full-duplex operation for simultaneous record and playback

Video-In Decoder *7114A*

The SAA7114 is a video capture device located at the image port of the VGA controller. It has the following features:

- Automatic detection of 50/60Hz field frequency and automatic switching between PAL and NTSC standards

- Luminance and chrominance signal processing for PAL BGDHIN, Combination-PAL N, PALM, NTSC M, NTSC-Japan, NTSC 4.43 and SECAM
- Two-wire, Inter-Integrated Circuit(I2C)
- User programmable sharpness control

Keyboard Controller - M38867M8

- Memory size: 1024 bytes (RAM)
- Timers: 8 bit prescaler X 4 + 8 bit timer X 3
- Comparator: 4 bit X 8 channels
- Bus interface: 2 bytes
- Key on wake-up: 8 channels
- Interrupts: 8 external, 7 internal and 1 software
- A-D converter: 8 channels
- D-A converter: 2 channels
- PWM: 2 channels
- System bus interface: 8042 type

IEEE 1394 – TI PHY TSB41LV02

- 400Mb/S max data rate
- Available with one or three ports
- Fully compliant with OpenHCI requirements
- Advanced Power Management
- Supports IEEE 1394-1995 Isolation Barrier Feature at LINK-PHY interface

LAN 100/10 Mbps – RTL8139C

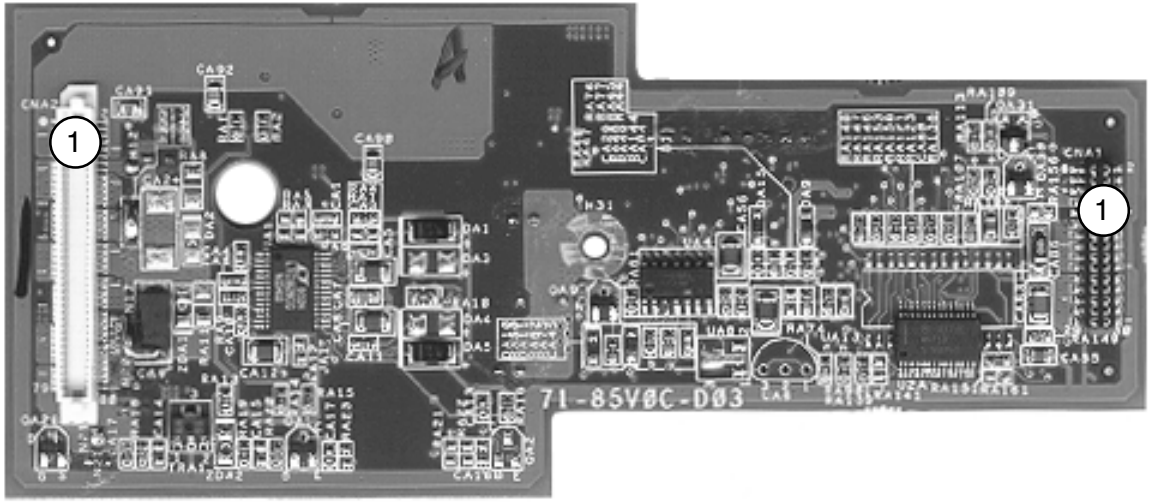
- Supports Wake-On-Lan and ACPI features
- Single-chip fast Ethernet controller

- Fully compliant with IEEE 802.3u 100Base-T SPEC and IEEE802.3x full duplex flow control
- Supports Analog Auto-Power-Down

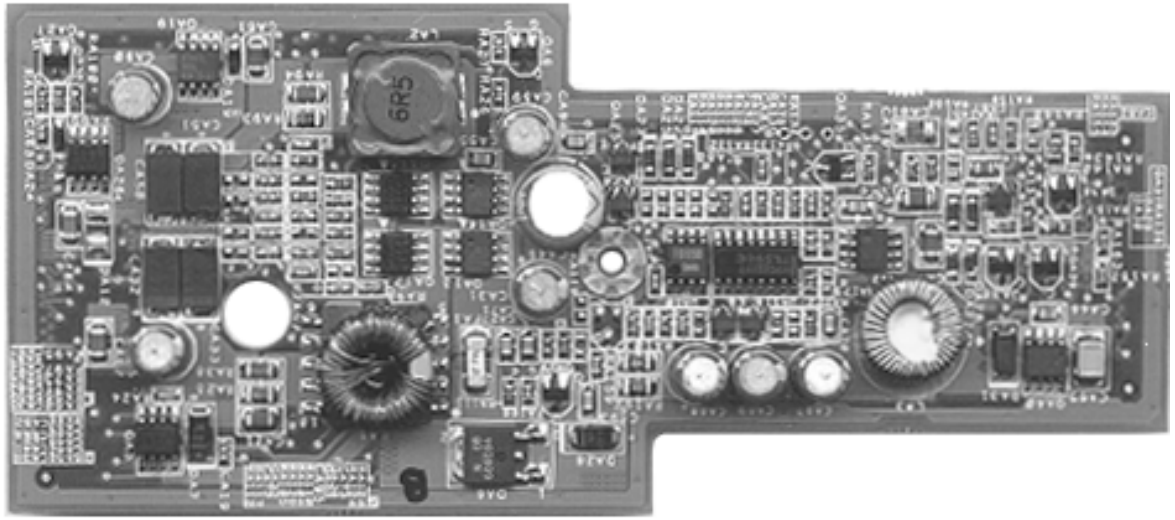
D/D Board

Top View

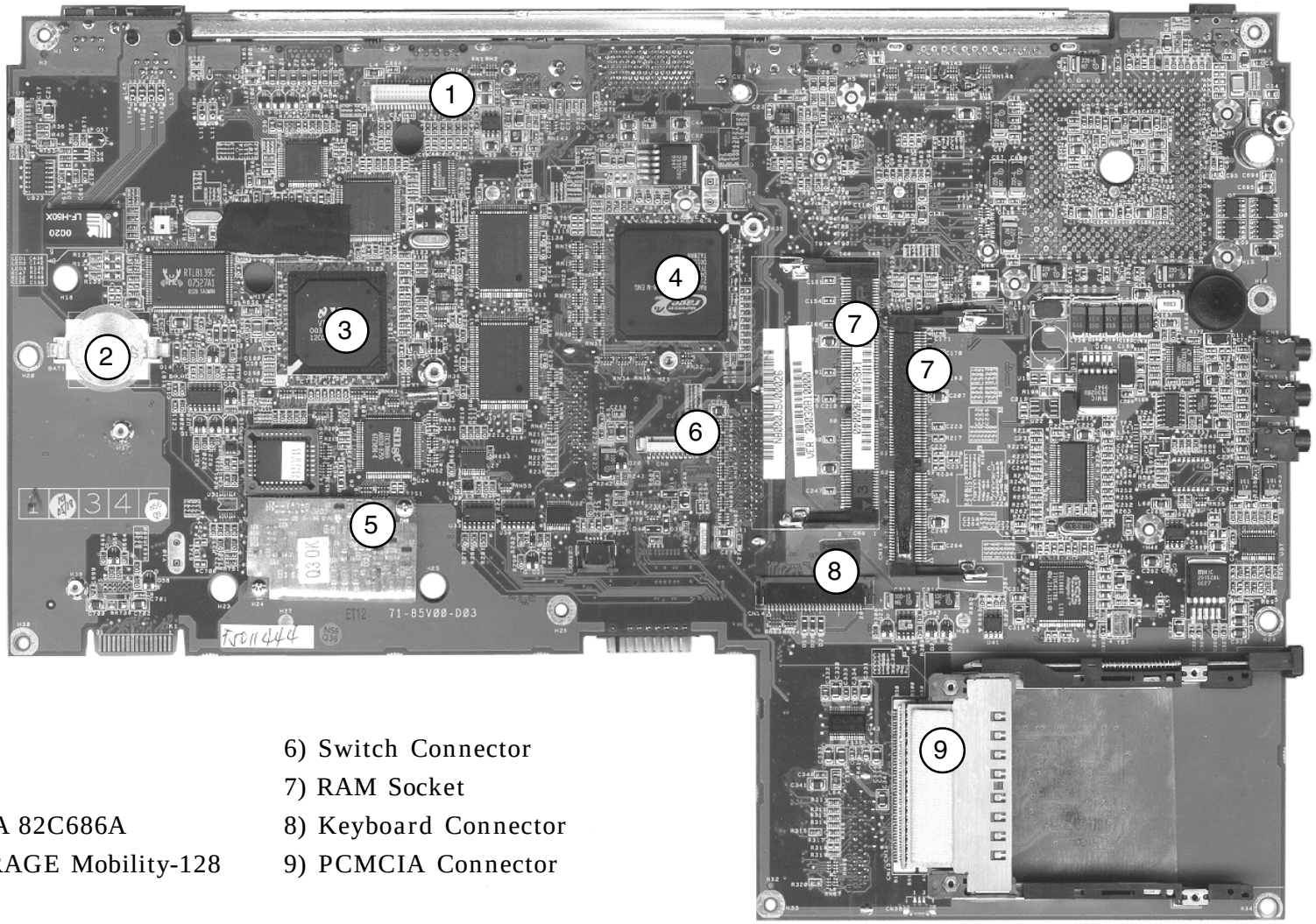
1) D/D Board Connectors



Bottom View



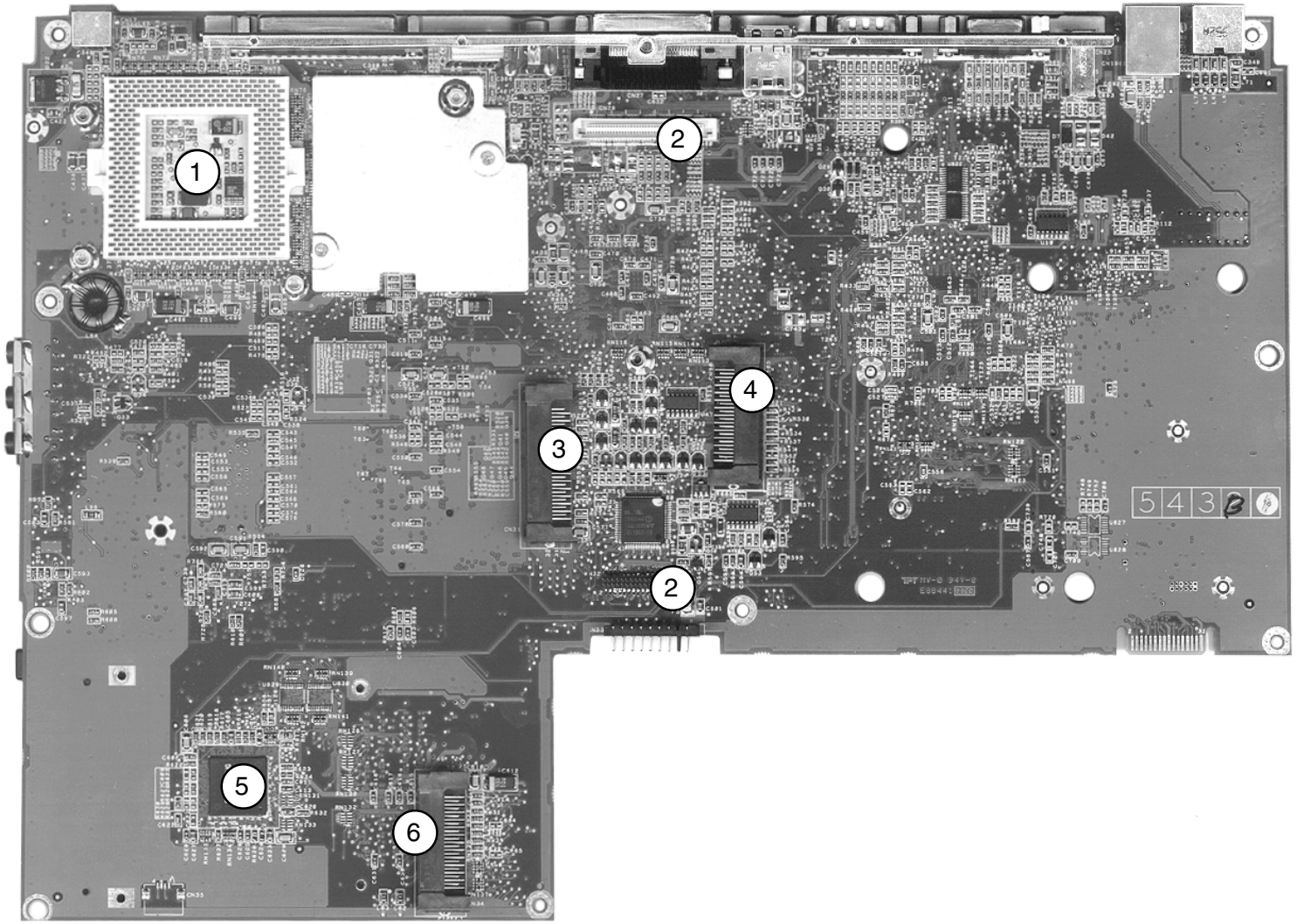
Mainboard Top View



1) LCD Connector
2) CMOS Battery
3) Southbridge Chip - VIA 82C686A
4) Video Chip - ATI 3D RAGE Mobility-128
5) MDC Card
6) Switch Connector
7) RAM Socket
8) Keyboard Connector
9) PCMCIA Connector

Mainboard Bottom View

1) CPU Socket
2) D/D board connectors
3) FDD connector
4) CD-ROM connector
5) PCMCIA chipset
6) HDD connector



Connector and pin information

HDD

Pin	Description	Pin	Description	Pin	Description	Pin	Description
1	GND	16	PIORDY	31	DDP10	46	CS3P#
2	GND	17	PDACK#	32	DDP11	47	GND
3	HDRST#	18	IRQ14	33	DDP12	48	HDD_VCC
4	DDP7	19	PDA1	34	DDP13	49	NC
5	DDP6	20	PDA0	35	DDP14	50	NC
6	DDP5	21	CS1P#	36	DDP15		
7	DDP4	22	PHD_LED#	37	NC		
8	DDP3	23	HDD_VCC	38	GND		
9	DDP2	24	GND	39	GND		
10	DDP1	25	NC	40	GND		
11	DDP0	26	GND	41	CSEL		
12	GND	27	GND	42	GND		
13	PDREQ	28	GND	43	NC		
14	PDIOW#	29	DDP8	44	NC		
15	PDIOR#	30	DDP9	45	PDA2		

CD-ROM

Pin	Description	Pin	Description	Pin	Description	Pin	Description
1	CD_L	16	SSDA1	31	SDDP11	46	CD_VCC
2	AGND	17	SSDA0	32	SDDP12	47	GND
3	CDRST#	18	SCS1S#	33	SDDP13	48	GND
4	SDDP7	19	SHD_LED#	34	SDDP14	49	GND
5	SDDP6	20	CD_VCC	35	SDDP15	50	NC
6	SDDP5	21	CD_VCC	36	SSDREQ		
7	SDDP4	22	GND	37	SSDIOR#		
8	SDDP3	23	GND	38	GND		
9	SDDP2	24	CSEL	39	SDACK#		
10	SDDP1	25	NC	40	NC		
11	SDDP0	26	CD_R	41	PDIAG		
12	GND	27	AGND	42	SSDA2		
13	SSDIOW#	28	SDDP8	43	SCS3S#		
14	SIORDY	29	SDDP9	44	CD_VCC		
15	CDIRQ	30	SDDP10	45	CD_VCC		

FDD

Pin	Description	Pin	Description	Pin	Description	Pin	Description
1	VCCS	16	DDS1	31	VCCS	46	DDS14
2	MTR0#	17	DDS0	32	DRV0#	47	DDS15
3	3MODE#	18	GND	33	INDEX#	48	NC
4	TRK0#	19	SDREQ	34	DSKCHG#	49	GND
5	HDSEL#	20	SDIOW#	35	DIR#	50	GND
6	RDATA#	21	SDIOR#	36	STEP#	51	GND
7	WP_FD#	22	SIORDY	37	WDAT#	52	CSEL
8	WGATE#	23	SDACK#	38	NC	53	GND
9	CDRST#	24	CD_IRQ	39	GND	54	NC
10	DDS7	25	SDA1	40	DDS8	55	PDIAG
11	DDS6	26	SDA0	41	DDS9	56	SDA2
12	DDS5	27	CS1S#	42	DDS10	57	CS3S#
13	DDS4	28	SHD_LED#	43	DDS11	58	GND
14	DDS3	29	CD_VCC	44	DDS12	59	CD_VCC
15	DDS2	30	GND	45	DDS13	60	NC

RS-232 Serial Interface

Pin	Description
1	DCD (DATA Carrier Detect)
2	RXD (Received Data)
3	TXD (Transmitted Data)
4	DTR (Data Terminal Ready)
5	GND (Signal Ground)
6	DSR (Data Set Ready)
7	RTS (Request To Send)
8	CTS (Clear To Send)
9	RI (Ring Indicator)

Parallel Interface

Pin	Description	Pin	Description
1	Strobe#	2	Data 0
3	Data 1	4	Data 2
5	Data 3	6	Data 4
7	Data 5	8	Data 6
9	Data 7	10	ACK#
11	Busy	12	Paper Empty
13	Select	14	Auto Linefeed#
15	Error#	16	Initialize#
17	Select In	18	Ground
19	Ground	20	Ground
21	Ground	22	Ground
23	Ground	24	Ground
25	Ground		

External Keyboard/PS2 Interface

Pin	Description
1	EKDA
2	EMDA
3	GND
4	VCC
5	EKCLK
6	EMCLK

External Monitor Interface

Pin	Description
1	BRED
2	BGREEN
3	BBLUE
4	N.C
5	GND
6	GND
7	GND
8	GND
9	N.C
10	GND
11	N.C
12	DDCDA
13	DHSYNC
14	DVSYNC
15	DDCLK

External S-video out Interface

Pin	Description
1	GND
2	COMP
3	XLUMA
4	XCRMA

Touchpad Interface

Pin	Description	Pin	Description
19	Ground	20	Ground
21	Ground	22	Ground
23	Ground	24	Ground
25	Ground		

External 1394 (IEEE) Interface

Pin	Description
1	VPP
2	VGND
3	TPB-
4	TPB+
5	TPA-
6	TPA+

External USB Interface-port A

Pin	Description
1	USB_VCCA
2	USBP0-
3	USBP0+
4	GND

External USB Interface-port B

Pin	Description
1	USB_VCCB
2	USBP1-
3	USBP1+
4	GND

PCMCIA Cardbus Interface Socket A

Pin	Description	Pin	Description	Pin	Description	Pin	Description
1	GND	26	GND	51	GND	76	GND
2	A-CD3	27	A-VPP	52	A-CD1#	77	A-VPP
3	A-CD4	28	A-CA16	53	A-CD11	78	A-CA22
4	GND	29	GND	54	GND	79	GND
5	A-CD5	30	A-CA15	55	A-CD12	80	A-CA23
6	A-CD6	31	A-CA12	56	A-CD13	81	A-CA24
7	GND	32	GND	57	GND	82	GND
8	A-CD7	33	A-CA7	58	A-CD14	83	A-CA25
9	A-CE1#	34	A-CA6	59	A-CD15	84	A-VS2
10	GND	35	GND	60	GND	85	GND
11	A-CA10	36	A-CA5	61	A-CE2#	86	A-RESET
12	A-OE#	37	A-CA4	62	A-VS1	87	A-WAIT#
13	GND	38	GND	63	GND	88	GND
14	A-CA11	39	A-CA3	64	A-IORD#	89	A-INPACK
15	A-CA9	40	A-CA2	65	A-IOWR#	90	A-REG#
16	GND	41	GND	66	GND	91	GND
17	A-CA8	42	A-CA1	67	A-CA17	92	A-BVD2#
18	A-CA13	43	A-CA0	68	A-CA18	93	A-BVD1#
19	GND	44	GND	69	GND	94	GND
20	A-CA14	45	A-CD0	70	A-CA19	95	A-CD8
21	A-WE#	46	A-CD1	71	A-CA20	96	A-CD9
22	GND	47	GND	72	GND	97	GND
23	A-RDYBY#	48	A-CD2	73	A-CA21	98	A-CD10
24	A-VCC-C	49	A-WP#	74	A-VCC-C	99	A-CD2#
25	GND	50	GND	75	GND	100	GND

PCMCIA Cardbus Interface Socket B

Pin	Description	Pin	Description	Pin	Description	Pin	Description
1	GND	26	GND	51	GND	76	GND
2	B-CD3	27	B-VPP	52	B-CD1#	77	B-VPP
3	B-CD4	28	B-CA16	53	B-CD11	78	B-CA22
4	GND	29	GND	54	GND	79	GND
5	B-CD5	30	B-CA15	55	B-CD12	80	B-CA23
6	B-CD6	31	B-CA12	56	B-CD13	81	B-CA24
7	GND	32	GND	57	GND	82	GND
8	B-CD7	33	B-CA7	58	B-CD14	83	B-CA25
9	B-CE1#	34	B-CA6	59	B-CD15	84	B-VS2
10	GND	35	GND	60	GND	85	GND
11	B-CA10	36	B-CA5	61	B-CE2#	86	B-RESET
12	B-OE#	37	B-CA4	62	B-VS1	87	B-WAIT#
13	GND	38	GND	63	GND	88	GND
14	B-CA11	39	B-CA3	64	B-IORD#	89	B-INPACK
15	B-CA9	40	B-CA2	65	B-IOWR#	90	B-REG#
16	GND	41	GND	66	GND	91	GND
17	B-CA8	42	B-CA1	67	B-CA17	92	B-BVD2#
18	B-CA13	43	B-CA0	68	B-CA18	93	B-BVD1#
19	GND	44	GND	69	GND	94	GND
20	B-CA14	45	B-CD0	70	B-CA19	95	B-CD8
21	B-WE#	46	B-CD1	71	B-CA20	96	B-CD9
22	GND	47	GND	72	GND	97	GND
23	B-RDYBY#	48	B-CD2	73	B-CA21	88	B-CD10
24	B-VCC-C	49	B-WP#	74	B-VCC-C	99	B-CD2#
25	GND	50	GND	75	GND	100	GND

Notes:

Part 3: Installing a processor

The notebook computer supports an Intel Pentium !!! processor.

Note:

Remember to wear an antistatic wrist strap when adding or replacing the processor.

If you remove the heat sink, which is necessary to add or replace the processor, you will need to have a replacement heat sink pad available. Before proceeding, please contact your dealer to get a replacement pad which you will need when you reinstall the heat sink.

The 4 basic steps to Installing/Upgrading a processor are:

A: Remove the heat sink

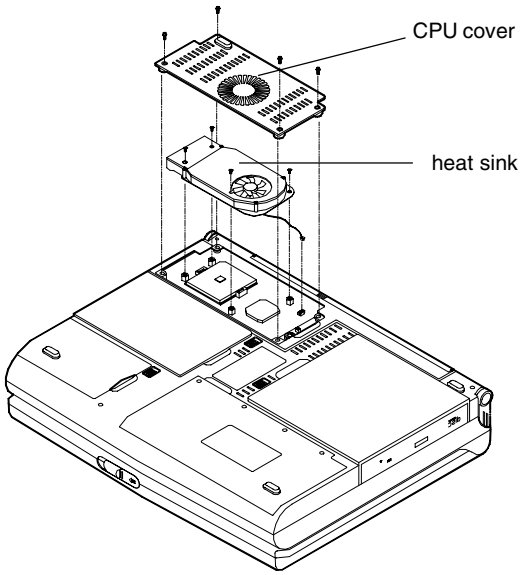
B: Remove the existing processor

C: Install a new processor

D: Install the heat sink

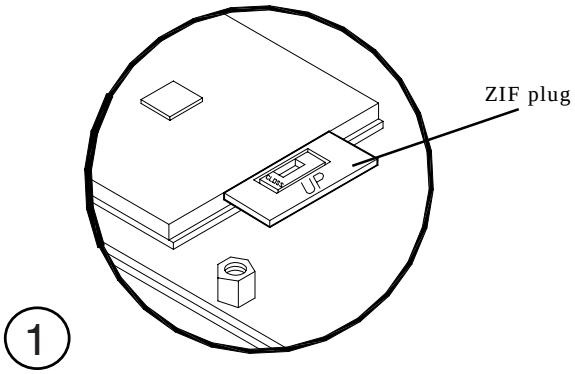
A: Remove the heat sink

1) Unscrew and remove the CPU cover.
2) Remove the four screws which hold the heat sink in place.
3) Lift the heat sink out of the computer.

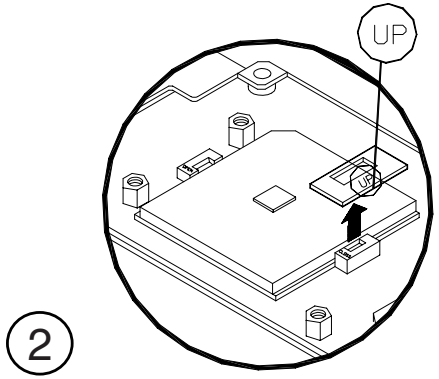


B: Remove the existing processor

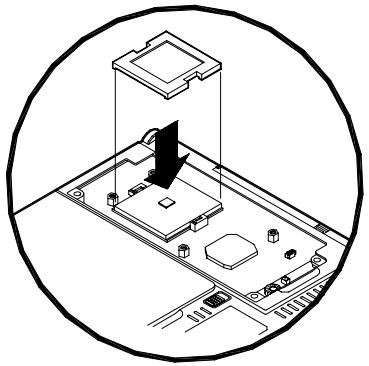
By this step you should have successfully removed the heat sink and are now looking at the CPU socket with processor.



The CPU socket with the ZIF plug (lock) in place.

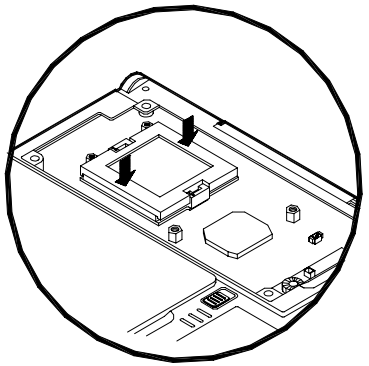


Remove the ZIF plug from the CLOSE side of the CPU socket.



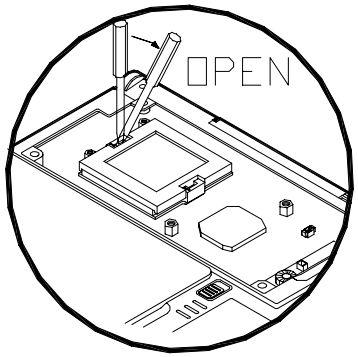
3

Align the CPU tool over the CPU.



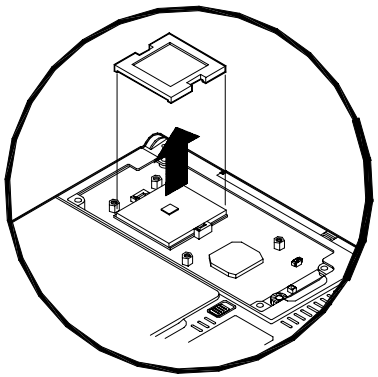
4

Place the CPU tool on top of the CPU.



5

Place the screwdriver into the open slot on the CPU case, then hold the CPU tool (jig) in place and move the screwdriver in towards the CPU. (this will unlock the CPU from its socket).

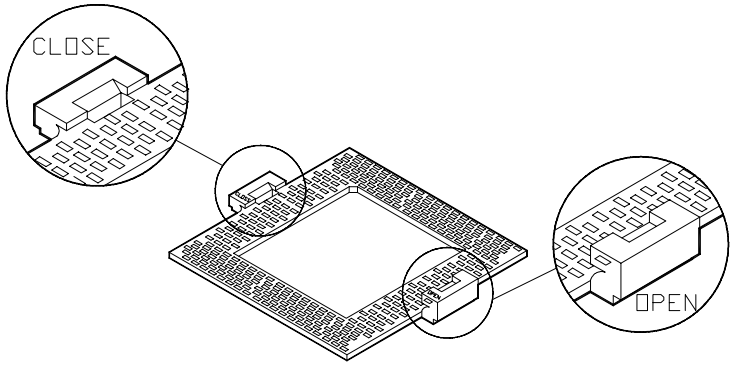


6

Remove the screwdriver and the CPU tool and gently lift the CPU out of the socket.

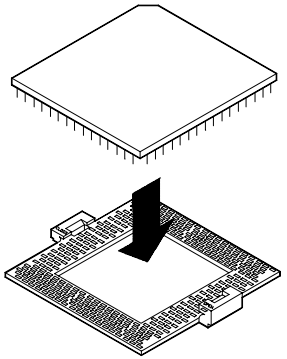
C: Install a new processor

Now you should be looking at an empty CPU socket. To install a new processor simply follow these steps:



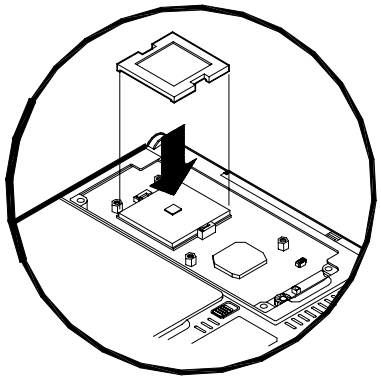
1

The empty CPU socket without a processor module.



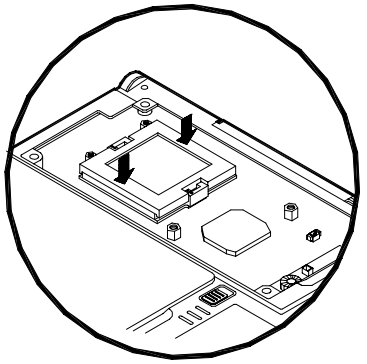
2

Gently place the processor into the opened CPU socket and press it into place.



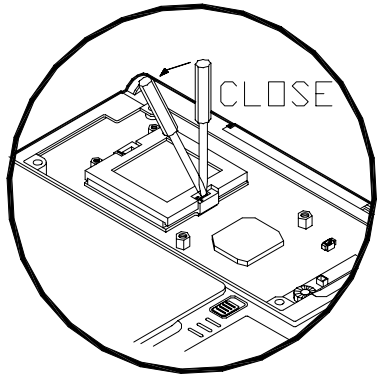
3

Align the CPU tool with the CPU socket.



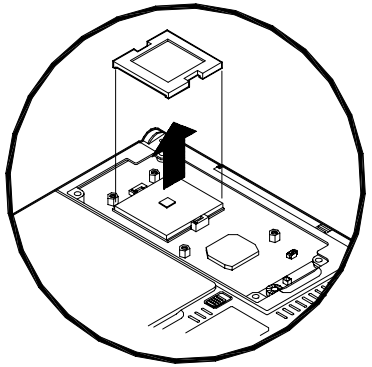
4

Place the CPU tool on top of the CPU.



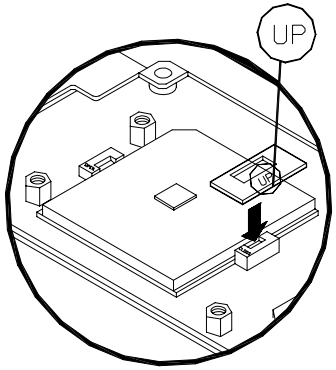
5

Place the screwdriver into the close slot on the CPU then move the screwdriver in towards the CPU. (this will lock the CPU securely in place).



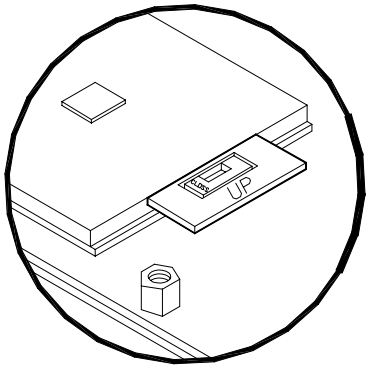
6

Remove the screwdriver and the CPU tool.



7

Place the ZIF plug (lock) on the CLOSE side of the CPU socket.



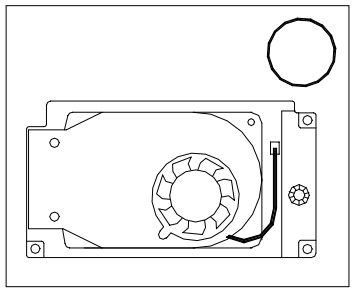
8

The processor is now securely locked into the CPU socket.

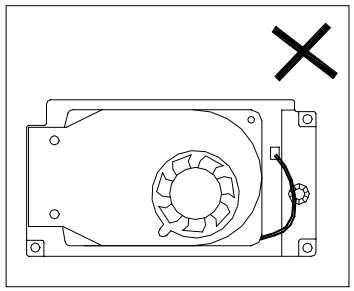
D: Install the heat sink

Note: *Before installing the heat sink, make sure you place a new heat sink pad on the heat sink.*

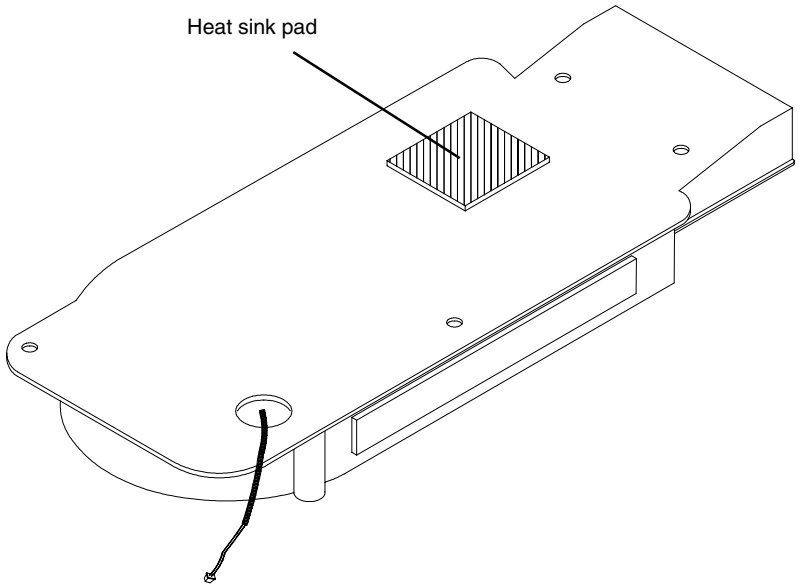
1) Peel off the old heat sink pad and stick on a new one.
2) Place the heat sink on top of the Hex studs.
3) Tighten the two heat sink screws on the CLOSE side of the CPU socket first. (this will prevent the socket from unlocking accidentally).
4) Tighten the two heat sink screws on the OPEN side of the CPU socket.
5) Make sure the Heat sink fan plug is properly installed.
6) Replace and screw in the CPU cover.



Proper installation of the heat sink.



Improper installation of the heat sink.



Part 4: BIOS

Updating the Flash ROM BIOS

To update the FLASH ROM BIOS you must do five things:

A: Download the BIOS update from the web site.
B: Create a bootable Floppy Disk.
C: Copy you BIOS files onto the bootable Floppy Disk.
D: Reboot your computer from the FDD.
E: Reboot from the HDD.

A: Download the BIOS update from the web site.

1) Using your web browser go to www.clevo.com.tw
2) Choose Download from the menu bar at the top of the page.
3) In the Download Drivers section select the model of your computer (8500V series) and the BIOS driver.
4) Select GO to download the zip file to your computer.
5) Unzip the file into a suitable directory.

B: Create a bootable Floppy Disk.

Through Windows 98

1) Insert a Floppy Disk into your FDD. (This disk will be overwritten and all information erased, so make sure it has no important data on it!)
2) Go to My Computer or Windows Explorer.
3) Highlight the Floppy Drive icon and click the left mouse button, a menu will appear.
4) Select Format.
5) In the "Format 3 ½ Floppy Drive" window select:
   Format type = Quick
   Other options = Copy system files.
6) Press "Start". (This will create a disk which you will use to boot your system and update your BIOS).

Through DOS

1) Insert a Floppy Disk into your FDD. (This disk will be overwritten and all information erased, so make sure it has no important data on it!)

2) At the DOS prompt type: **Format A:/s**

C: Copy your BIOS files on to the bootable Floppy Disk.

Take the Unzipped BIOS files and copy them to the disk you just formatted.

D: Reboot your computer from the FDD

1) Insert the newly formatted disk with the BIOS files into your Floppy Drive.

2) Restart your computer.

Note: *When your system boots from the floppy disk it will automatically update the BIOS.*

E: Reboot your computer from the HDD

After the computer has been started using the floppy disk:

1) Turn off the computer.

2) Remove the floppy disk from the drive.

3) Restart the computer.

It is now running normally with the updated BIOS.

Phoenix BIOS Post Error Messages

Errors which occur during the POST procedure can be grouped into two categories, fatal and nonfatal. All fatal errors will not allow the system to continue the boot process.

Fatal Errors

Error Code	Beep Sequence	Description
16	1-2-2-3	BIOS RAM checksum
20	1-3-1-1	Test DRAM refresh
22	1-3-1-3	Test 8742 Keyboard controller
2C	1-3-4-1	RAM failure on address line xxxx
2E	1-3-4-3	Ram failure on DATA bits xxxx of low byte memory bus
30	1-4-1-1	Ram failure on DATA bits xxxx of high type memory bus
46	2-1-2-3	Check ROM copyright notice
58	2-2-3-1	Test for unexpected interrupts

Nonfatal errors

Most nonfatal errors will allow the system to boot. Should the system halt due to a nonfatal error, a physical change must be made to the system.

Error Code	Definition
02	Verify real mode
04	Get CPU type
06	Initialize system hardware
08	Initialize chipset registers with initial POST values
09	Set in POST flag
0A	Initialize CPU registers
0B	Enable CPU cache
0C	Initialize cahces to initial POST values
0E	Initialize I/O
0F	Initilize the lical bus IDE
10	Initialize Power Management
11	Load alternative keyboard controller
12	Restore CPU control word during warm reboot
14	Initialize keyboard controller
16	BIOS ROM checksum (beep code 2-2-3)
18	8254 timer initialization

Error Code	Definition
1A	8237 DMA controller initialization
1C	Reset programmable interrupt controller
20	Test DRAM refresh code 3-1-1
22	Test 8247 keyboard controller (bep code 3-1-3)
24	Set ES segment register to 4GB
28	Autosize DRAM
2A	Clear 512K base DRAM
2C	RAM failure on address line xxxx' (beep code 3-4-1)
2E	RAM failure on data bits xxxx' of low byte of memory bus (beep code 3-4-3)
32	Test CPU bus clock frequency
34	Test CMOS RAM
35	Initialize alternative chipset registers
36	Warm start shutdown
38	Shadow system BIOS ROM
3A	Autosize cache

Error Code	Definition
3C	Configure advanced chipset registers
3D	Load alternate registers with CMOS values
42	Initialize interrupt vectors
44	Initialize BIOS interrupts
46	Check ROM copyright notice (beep code 2-1-2-3)
47	Initialize manager for PCI option ROMS
48	Check video configuration against CMOS
49	Initialize PCI bus and devices
4A	Initialize all video adapters in system
4B	Display QuietBoot screen
4C	Shadow video BIOS ROM
4E	Display copyright notice
50	Display CPU type and speed
51	Intialize EISA board
52	Test keyboard

Error Code	Definition
54	Set key click if enabled
56	Enable keyboard
58	Test for unexpected interrupts (beep code 2-2-3-1)
5A	Display prompt "Press F2 to enter Setup"
5C	Test RAM between 512 and 640K
60	Test extended memory
62	Test extended memory address lines
64	Jump to UserPatch1
66	Configure advanced cache registers
68	Enable external and CPU caches
6A	Display external cache size
6C	Display shadow message
6E	Display non-disposable segments
70	Display error messages
72	Check for configuration errors
74	Test real time clock

Error Code	Definition
76	Check for keyboard errors
7C	Test for hardware interrupt vectors
7E	Test coprocessor if present
80	Disable onboard I/O ports
82	Detect and install external RS232 ports
84	Detect and install external parallel ports
85	Initialize PC-compatible PnP ISA devices
86	Re-intialize onboard I/O ports
88	Initialize BIOS Data area
8A	InitializeExtended BIOS Data area
8C	Initialize floppy controller
90	Initialize hard disk controller
91	Initialize local-bus hard disk controller
92	Jump to UserPatch2
93	Build MPTABLE for multi-processor boards
94	Disable A20 address line

Error Code	Definition
95	Install CD-ROM for boot
96	Clear huge ES segment register
98	Search for option ROMs
9A	Shadow option ROMs
9C	Set up Power Management
9E	Enable hardware interrupts
A0	Set time for day
A2	Check Keylock
A4	Initialize typematic rate
A8	Erase F2 prompt
AA	Scan for F2 prompt
AC	Scan for F2 keystroke
AE	Clear on-POST flag
B0	Check for errors
B2	POST done -prepare to boot operating system
B4	One beep
B5	Display MultiBoot menu

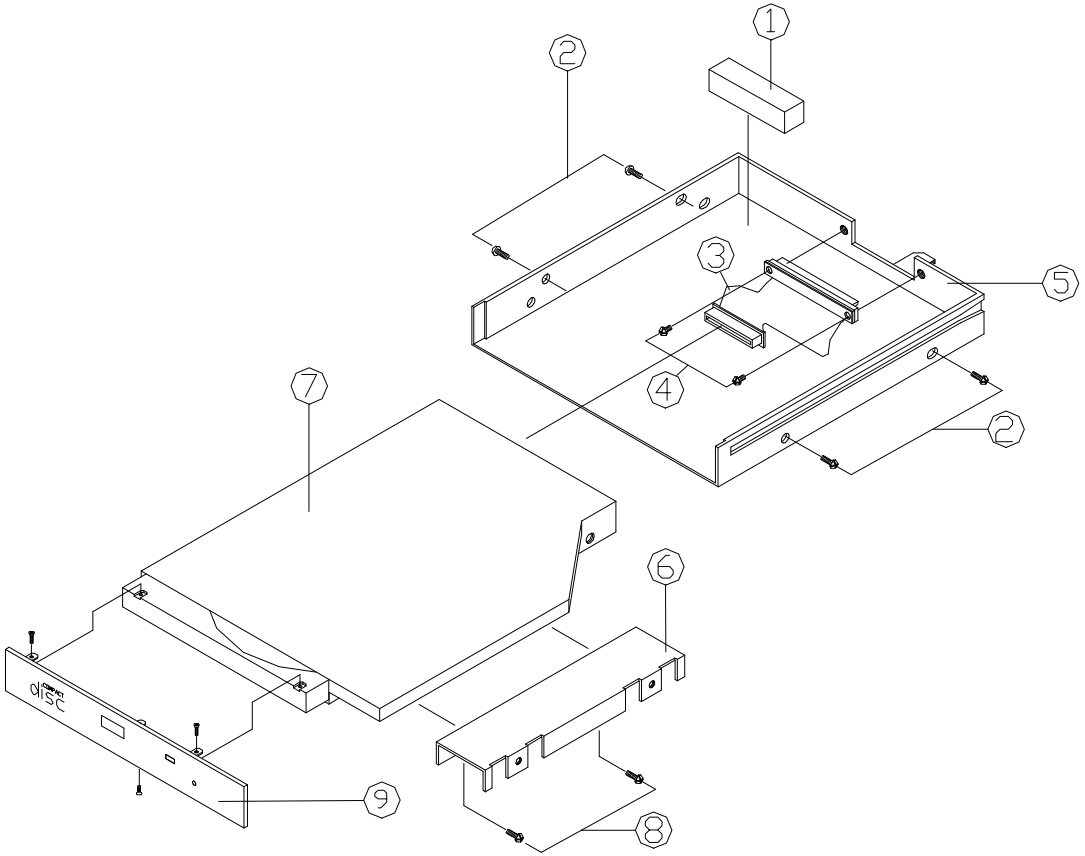
Error Code	Definition
B5	Display MultiBoot menu
B6	Check password (optional)
B8	Clear global descriptor table
BC	Clear parity checkers
BE	Clear screen (optional)
BF	Check virus and backup reminders
C0	Try boot with INT 19
D0	Interrupt handler error
D2	Unknown interrupt error
D4	Pending interrupt error
D6	Initialize option ROM error
D8	Shutdown error
DA	Extended block move
DC	Shutdown 10 error

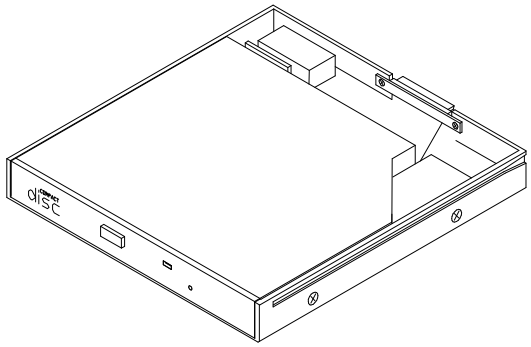
Flash ROM Error codes

Error Code	Definition
E2	Initialize the chipset
E3	Initialize refresh counter
E4	Check for Forced Flash
E5	Check HW status for ROM
E6	BIOS ROM is OK
E7	Do a complete RAM test
E8	Do OEM intialization
E9	Initialize interrupt controller
EA	Read in the bootstrap code
EB	Initialize all vectors
EC	Boot the Flash program
ED	Initialize the boot device
EE	Boot code was read OK

Notes:

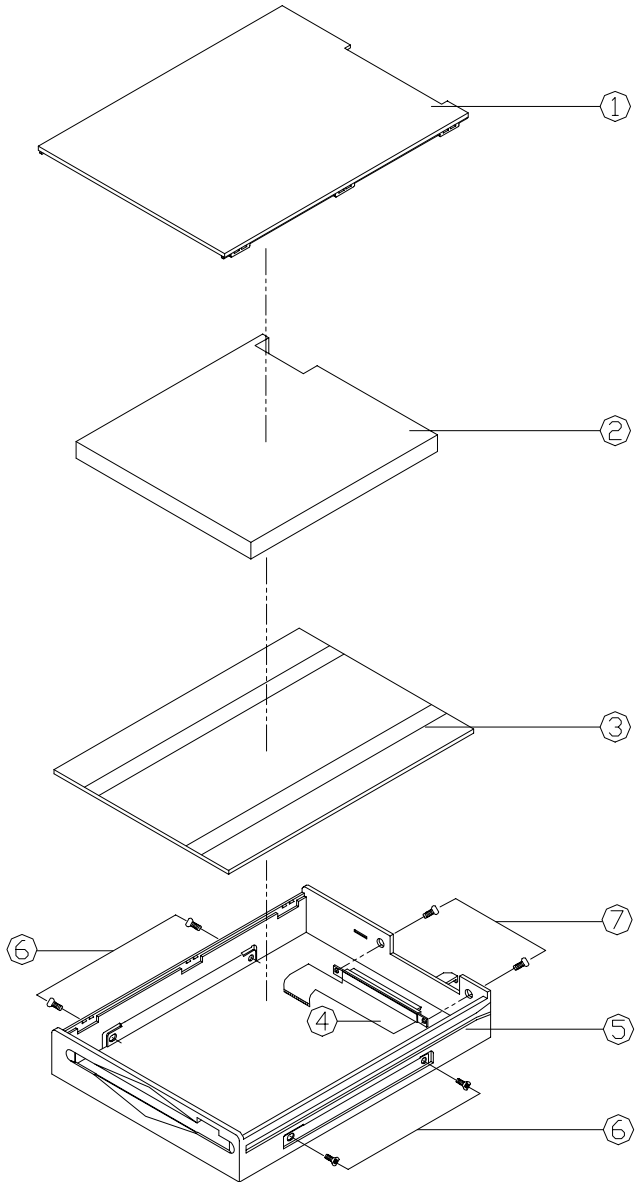
Part 5: Diagrams and part numbers

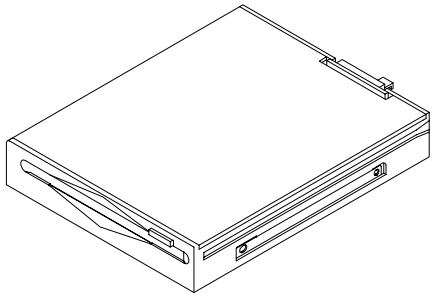




ITEM	PART NAME	PART NO	REMARK
1	SPONGE FOR CD-ROM	47-8509Z-010	
2	SCREW	35-46120-3RA	
3	FPC CABLE 24X	28-79R50-44E	TEAC
4	SCREW	35-26125-5RA	
5	CD-ROM CASE	42-8507Z-011	
6	CD-ROM BRACKET	33-8500Z-011	
7	CD-ROM 24X	87-62010-058	TEAC
8	SCREW	35-01120-2RE	
9	CD-ROM PANEL	79-6202Z-001	

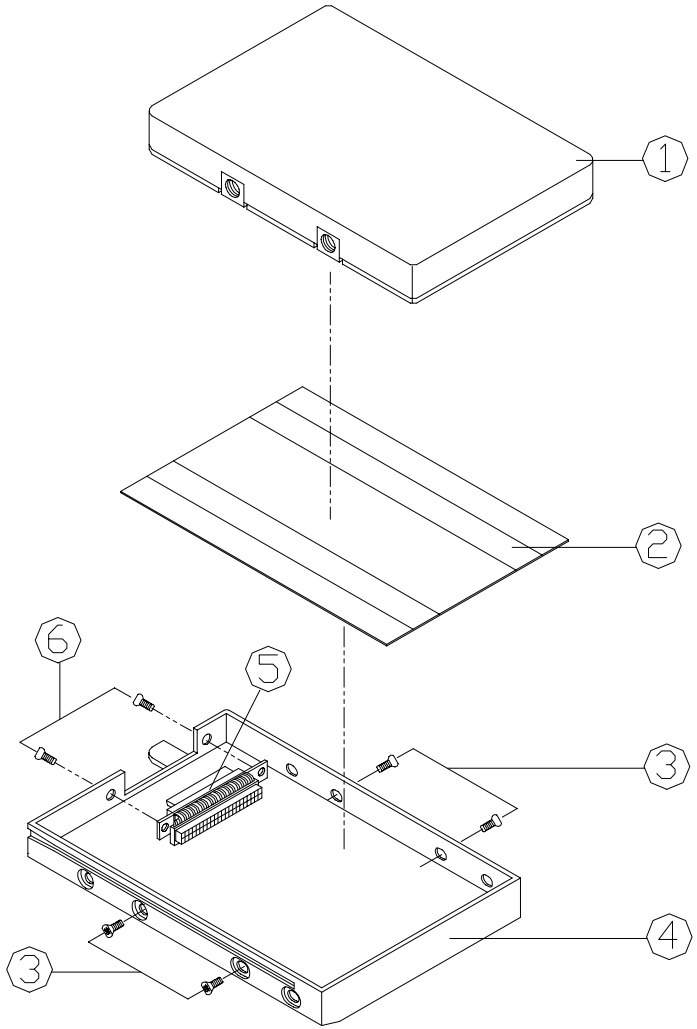
CD-ROM Assembly

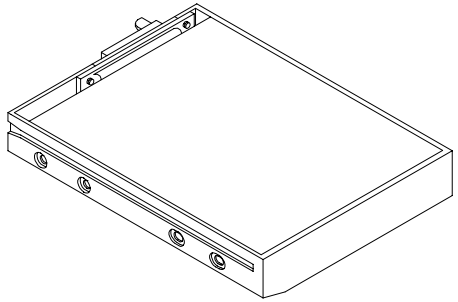




ITEM	PART NAME	PART NO	REMARK
1	FDD TOP CASE	42-8507J-010	
2	3.5" FDD	85-23211-567-C	TEAC
3	FDD MYLAR	40-8505J-010-A	
4	FPC CABLE	28-59R60-290	TEAC
5	FDD BOTTOM CASE	42-8507J-022	
6	SCREW	35-B4125-4RA	
7	SCREW	35-B4125-5RA	

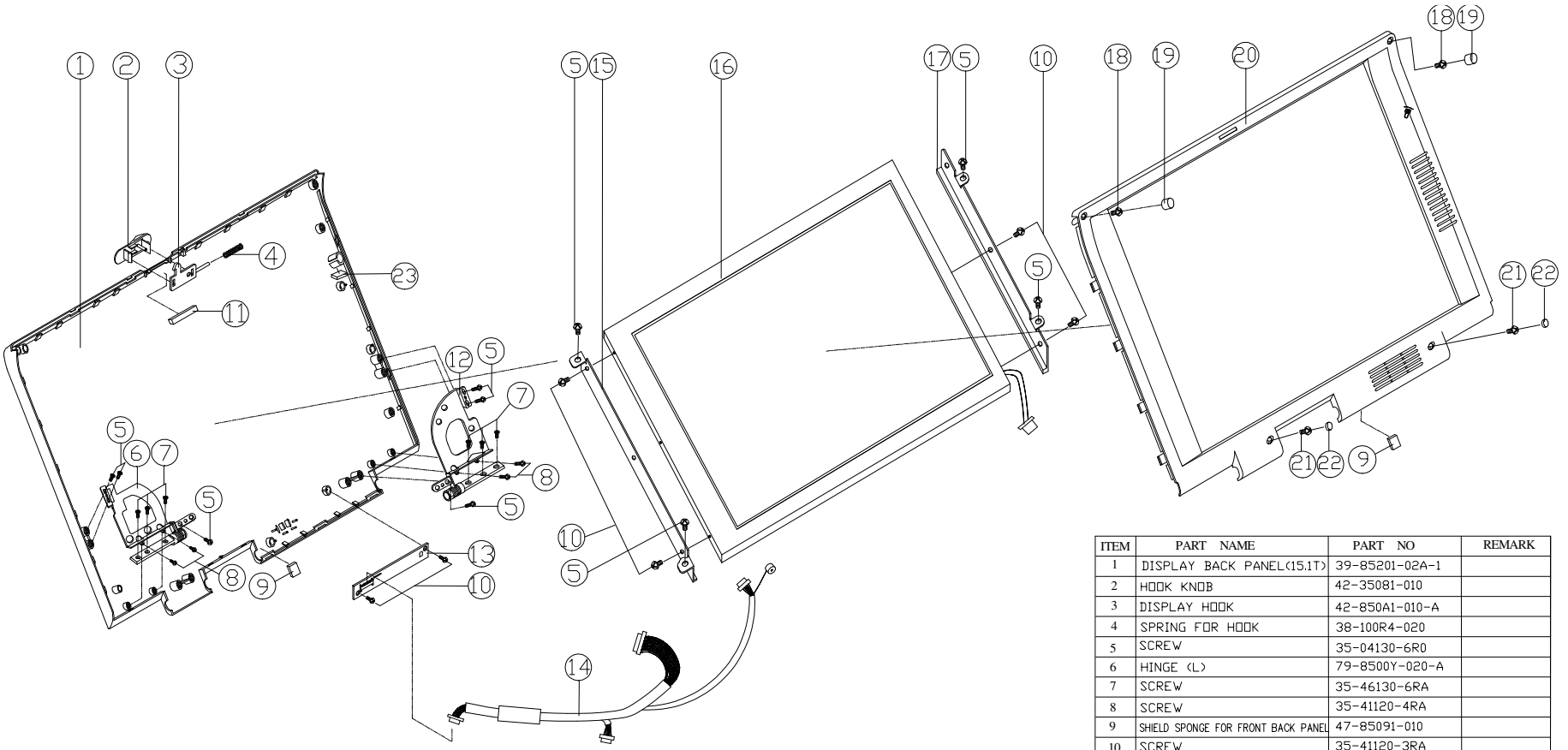
FDD Assembly





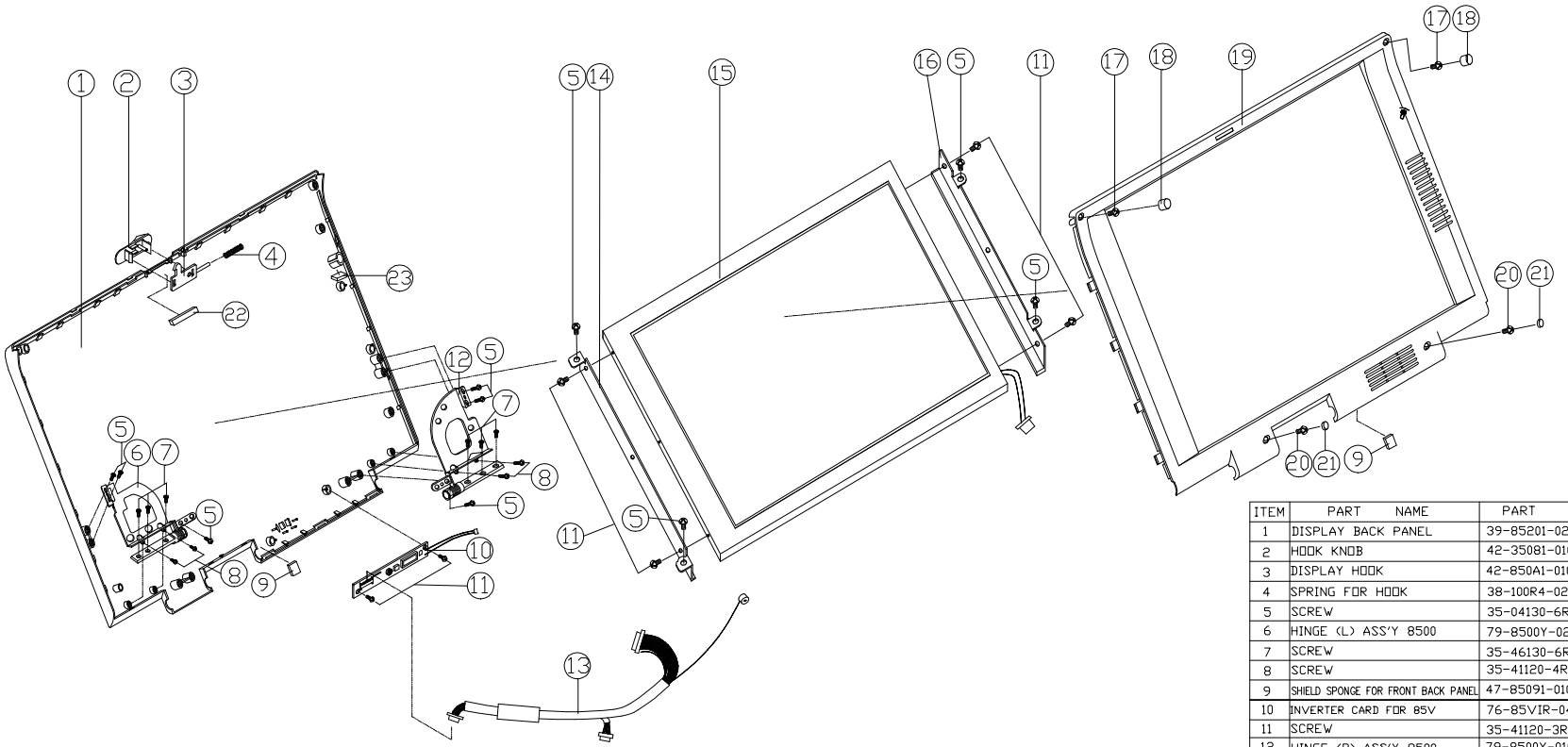
ITEM	PART NAME	PART NO	REMARK
1	2.5"HDD	85-12211-514	IBM
1	2.5"HDD	85-12211-542	SEAGATE
1	2.5"HDD	85-12211-59T	TOSHIBA
1	2.5"HDD	85-12211-5ET	TOSHIBA
2	HDD MYLAR	40-6205I-010	
3	SCREW	35-B1130-4RB	
4	HDD CASE	42-8507I-010	
5	FPC CABLE	28-79R50-260	
6	SCREW	35-B4125-5RA	

HDD Assembly



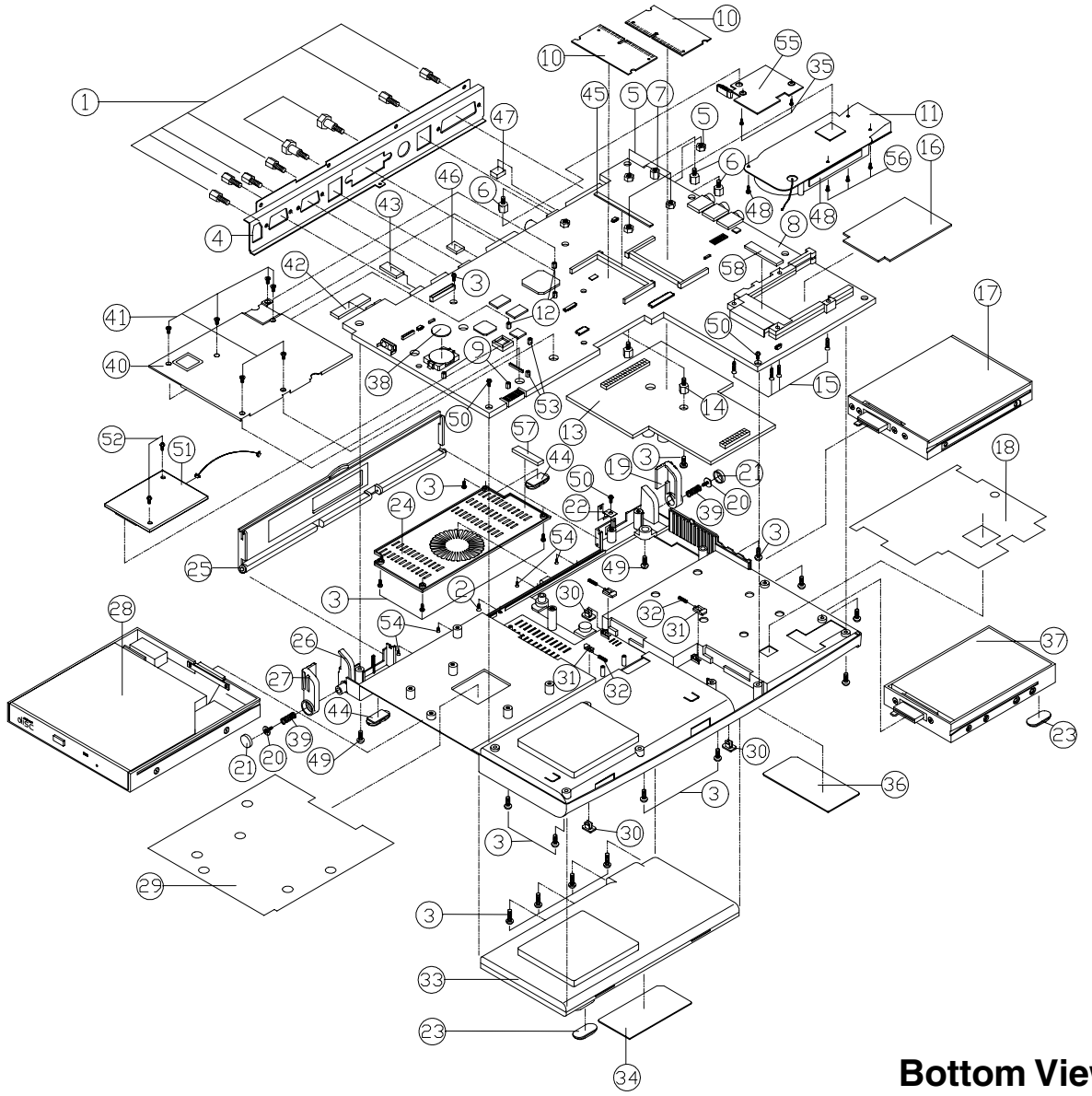
ITEM	PART NAME	PART NO	REMARK
1	DISPLAY BACK PANEL(15.1T)	39-85201-02A-1	
2	HOOK KNOB	42-35081-010	
3	DISPLAY HOOK	42-850A1-010-A	
4	SPRING FOR HOOK	38-100R4-020	
5	SCREW	35-04130-6R0	
6	HINGE (L)	79-8500Y-020-A	
7	SCREW	35-46130-6RA	
8	SCREW	35-41120-4RA	
9	SHIELD SPONGE FOR FRONT BACK PANEL	47-85091-010	
10	SCREW	35-41120-3RA	
11	SPONGE EVA FOR BACK PANEL	47-85V91-010	
12	HINGE (R)	79-8500Y-010-B	
13	INV. CARD FOR 85V 15.0"	76-85VIR-040	INSSUN
14	WIRE CABLE FOR 15" LCD	43-85V01-061	LG
15	LCD BRACKET (L) FOR 15"	33-85001-220	
16	LCD T LG LP150X1 15" XGA	50-L6707-63L	LG
17	LCD BRACKET (R) FOR 15"	33-85001-210	LG
18	SCREW	35-01120-4R0-A	
19	DISPLAY RUBBER PAD (UP)	47-52021-010	
20	DISPLAY FRONT PANEL(15"T)	39-85201-51B	
21	SCREW	35-84130-6RA	
22	DISPLAY RUBBER PAD (BOTTOM)	47-85021-010	
23	SPONGE FOR MIC	47-0019A-100	

LG Display Panel



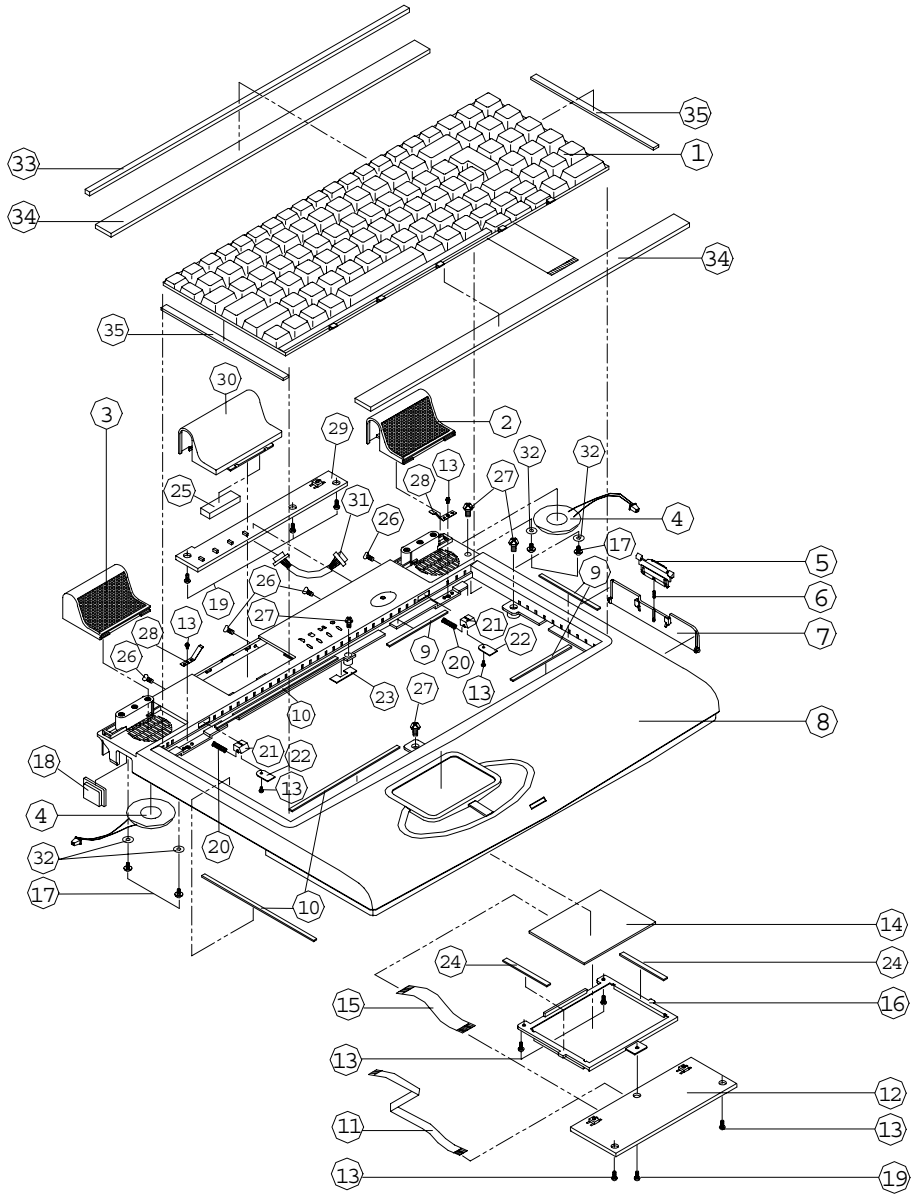
ITEM	PART NAME	PART NO	REMARK
1	DISPLAY BACK PANEL	39-85201-02A-1	
2	HOOK KNOB	42-35081-010	
3	DISPLAY HOOK	42-850A1-010-A	
4	SPRING FOR HOOK	38-100R4-020	
5	SCREW	35-04130-6R0	
6	HINGE (L) ASS'Y 8500	79-8500Y-020-A	
7	SCREW	35-46130-6RA	
8	SCREW	35-41120-4RA	
9	SHIELD SPONGE FOR FRONT BACK PANEL	47-85091-010	
10	INVERTER CARD FOR 85V	76-85VIR-040	
11	SCREW	35-41120-3RA	
12	HINGE (R) ASS'Y 8500	79-8500Y-010-B	
13	WIRE CABLE	43-85V01-030	SAMSUNG
13	WIRE CABLE	43-85V01-021	HITACHI
13	WIRE CABLE	43-85V01-010	HYUNDAI
13	WIRE CABLE	43-85V01-041	SANYO
13	WIRE CABLE	43-85V01-051	SANYO
14	LCD BRACKET (L) FOR 15"	33-85V01-020	HYUNDAI
15	LCD (15") TFT	50-L5268-P00	PANASONIC
15	LCD (15") TFT	50-L2207-S01	SANYO
15	LCD (15") TFT	50-L5268-I00	HITACHI
15	LCD (15") TFT	50-L5272-H00	HYUNDAI
15	LCD (15") TFT	50-L5275-M01	SAMSUNG
16	LCD BRACKET (R) FOR 15"	33-85V01-010	PANASONIC
17	SCREW	35-01120-4R0-A	
18	DISPLAY RUBBER PAD (UP)	47-52021-010	
19	DISPLAY FRONT PANEL(15"T)	39-85201-51B	
20	SCREW	35-84130-6RA	
21	DISPLAY RUBBER PAD (BOTTOM)	47-85021-010	
22	SPONGE EVA FOR BACK PANEL	47-85V91-010	
23	SPONGE FOR MIC	47-0019A-100	

(Panasonic, Sanyo, Hyundai, Hitachi) Display Panel



Bottom View

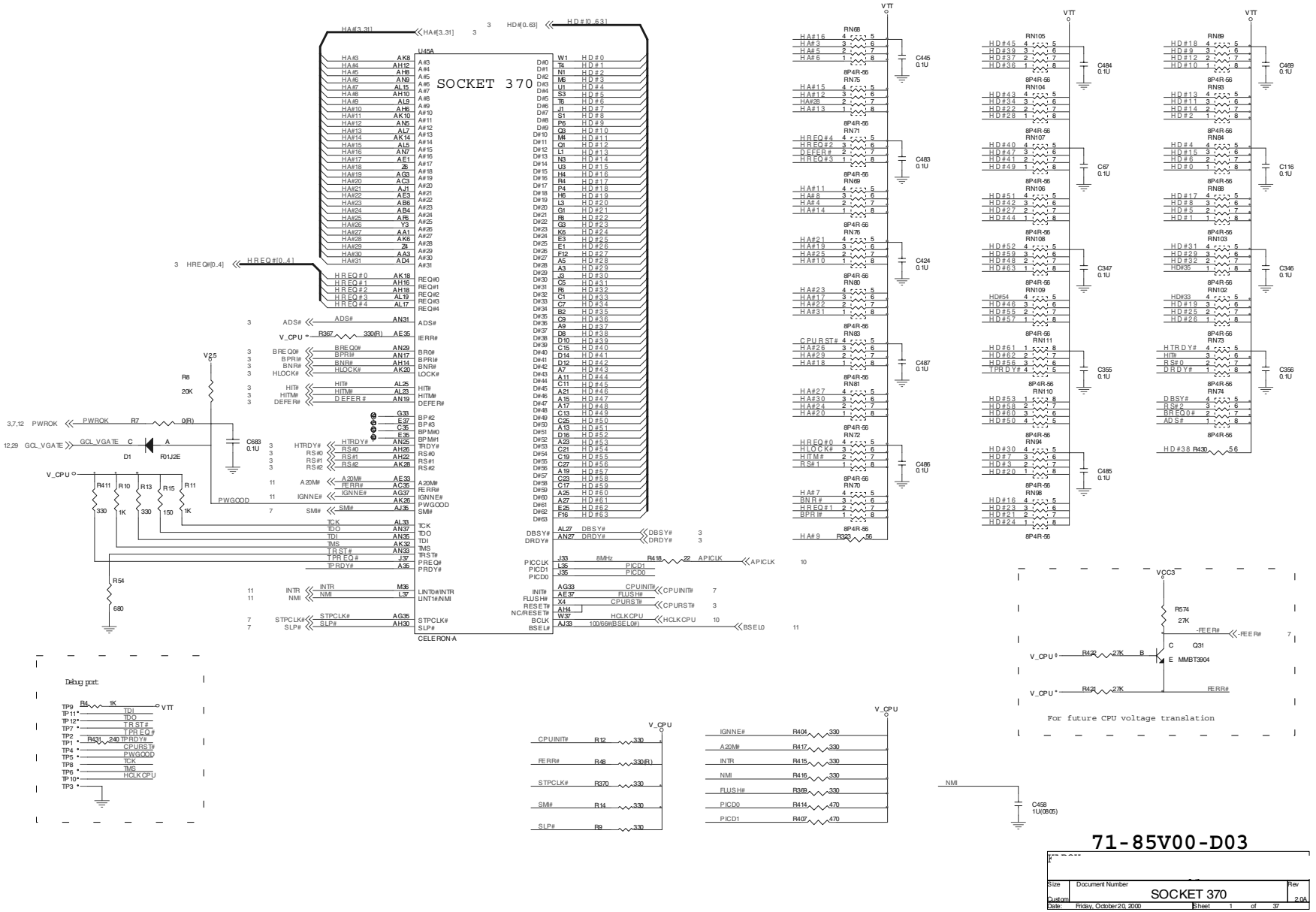
ITEM	PART NAME	PART NO	REMARK
1	HEX STUD	34-07009-011-A	
2	SCREW	35-26130-6R0	
3	SCREW	35-06125-6R0-A	
4	REAR BRACKET	33-85P0Q-011	
5	NUT M2.5,SN	36-05111-250	
6	HEX STUD	34-85V0N-010	
7	HEX STUD	34-85V0S-010	
8	MAIN BOARD	77-85V00-D0X	
9	HEX STUD	34-85V0P-010	
10	SDRAM CARD 32M	76-9827U-840	
10	SDRAM CARD 32M	76-0017U-810	
10	SDRAM CARD 32M	76-0017U-820	
10	SDRAM CARD 64M	76-0017U-A10	
10	SDRAM CARD 64M	76-0017U-A20	
10	SDRAM CARD 128M	76-0018U-B10	
11	HEAT SINK MODULE	31-85V00-010	
12	HEX STUD	34-85V0S-010	
13	DC/DC	77-85V0C-D03	
14	HEX STUD	34-8500S-02A	
15	SCREW	35-41120-14A	
16	MYLAR FOR CARD BUS	40-85053-030	
17	FDD ASS'Y 8500	79-8502J-010-A	Reference Ass'y Dwg (99-85005-050)
18	MYLAR(B)	40-85053-021	
19	FOOT(R)	42-85063-010-A	
20	SCREW	35-41025-4RA	
21	FOOT RUBBER	47-85013-010-A	
22	LOCK BRACKET	33-85003-020	
23	BOTTOM CASE RUBBER PAD	47-35023-010-A	
24	CPU COVER	42-85M73-010	
25	REAR COVER ASS'Y	42-85P7Q-001	
26	BOTTOM CASE	39-85013-01G	
27	FOOT(L)	42-85063-020	
28	CD-ROM ASS'Y 8500	79-8502Z-060	Reference Ass'y Dwg (99-85005-070)
29	MYLAR (A)	40-85053-010-A	
30	BATTERY LOCK KNOB	42-6208M-010	
31	HDD LOCK	42-85083-011	
32	LOCK KNOB SPRING	38-62026-010	
33	BATTERY	87-85V8S-42A	
33	BATTERY	87-85V8S-42H	
34	LABEL FOR BATTERY	45-3500M-010	
35	SCREW	35-B1120-3RA	
36	FCC LABEL 8500	45-85V03-030	
37	HDD ASS'Y 8500	79-8502I-010-A	Reference Ass'y Dwg (99-85005-060)
38	MYLAR FOR BATTERY	40-8505M-010	
39	FOOT SPRING	38-85026-010	
40	K/B BRACKET	33-85V07-011	
41	SCREW	35-29120-3R5	
42	GASKET (W10*33L*5.5t)	47-00190-103	
43	GASKET (10*17*6.5)	47-00190-104	
44	BOTTOM CASE RUBBER PAD	47-85M23-010	
45	MYLAR FOR DIMM	40-8505S-011	
46	GASKET (14*10*5.5)	47-00190-1E0	
47	GASKET FOR PS2 (14*5*5.5)	47-85093-030	
48	SCREW	35-41125-120-1	
49	SCREW	35-06130-6RA	
50	SCREW	35-41125-4R0	
51	MODEM MODULE 4.0	76-85V00-001	
52	SCREW	35-41120-3RA	
53	HEX STUD	34-85V0S-040	
54	SCREW	35-22120-5R0	
55	AL PLATE FOR CHIP	33-85V0S-010	
56	GASKET(W7*L50*H2)	47-00190-071	
57	GASKET(30*5*4t)	47-00190-1S0	
58	GASKET(9*40*3.5t)	47-00190-401	

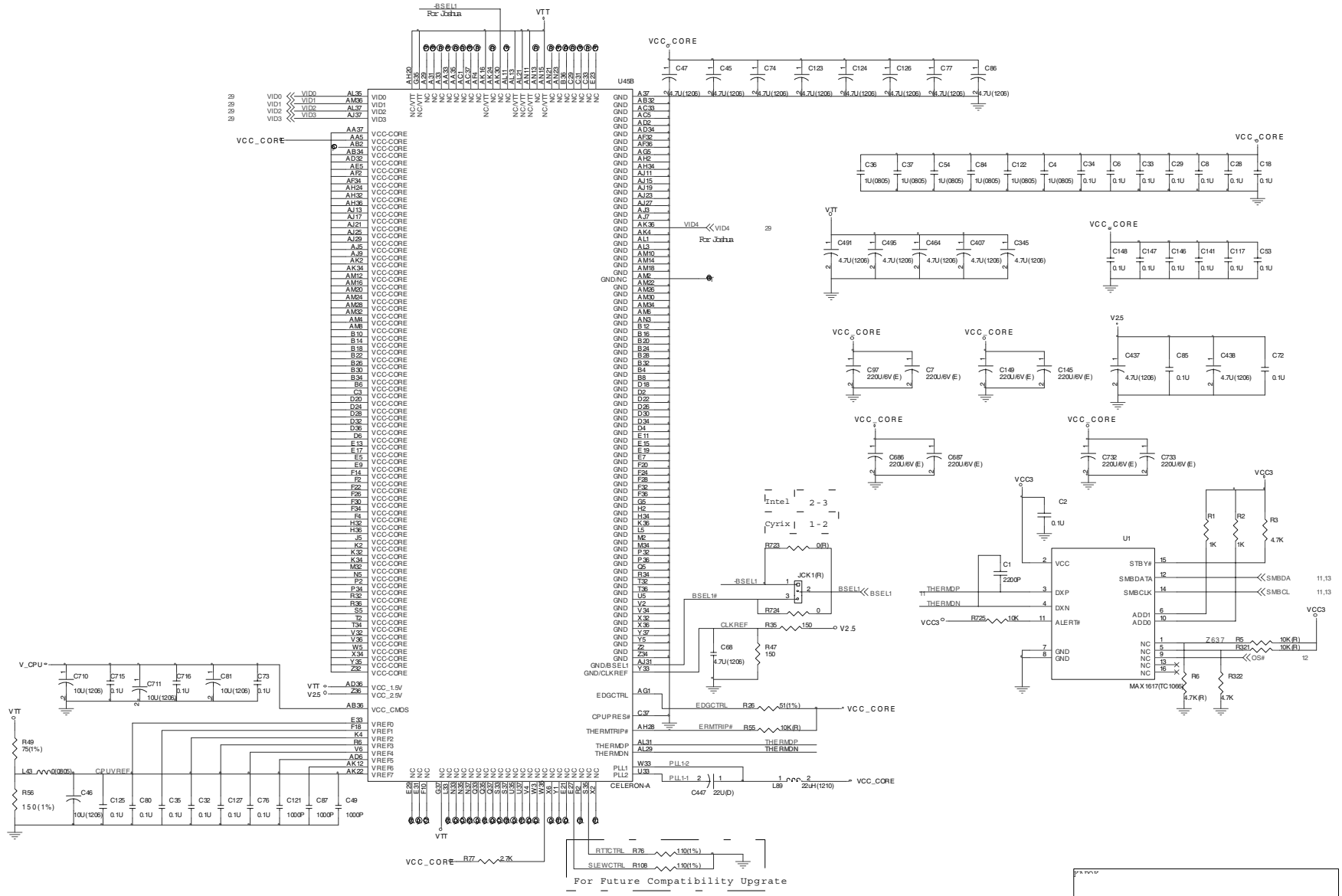


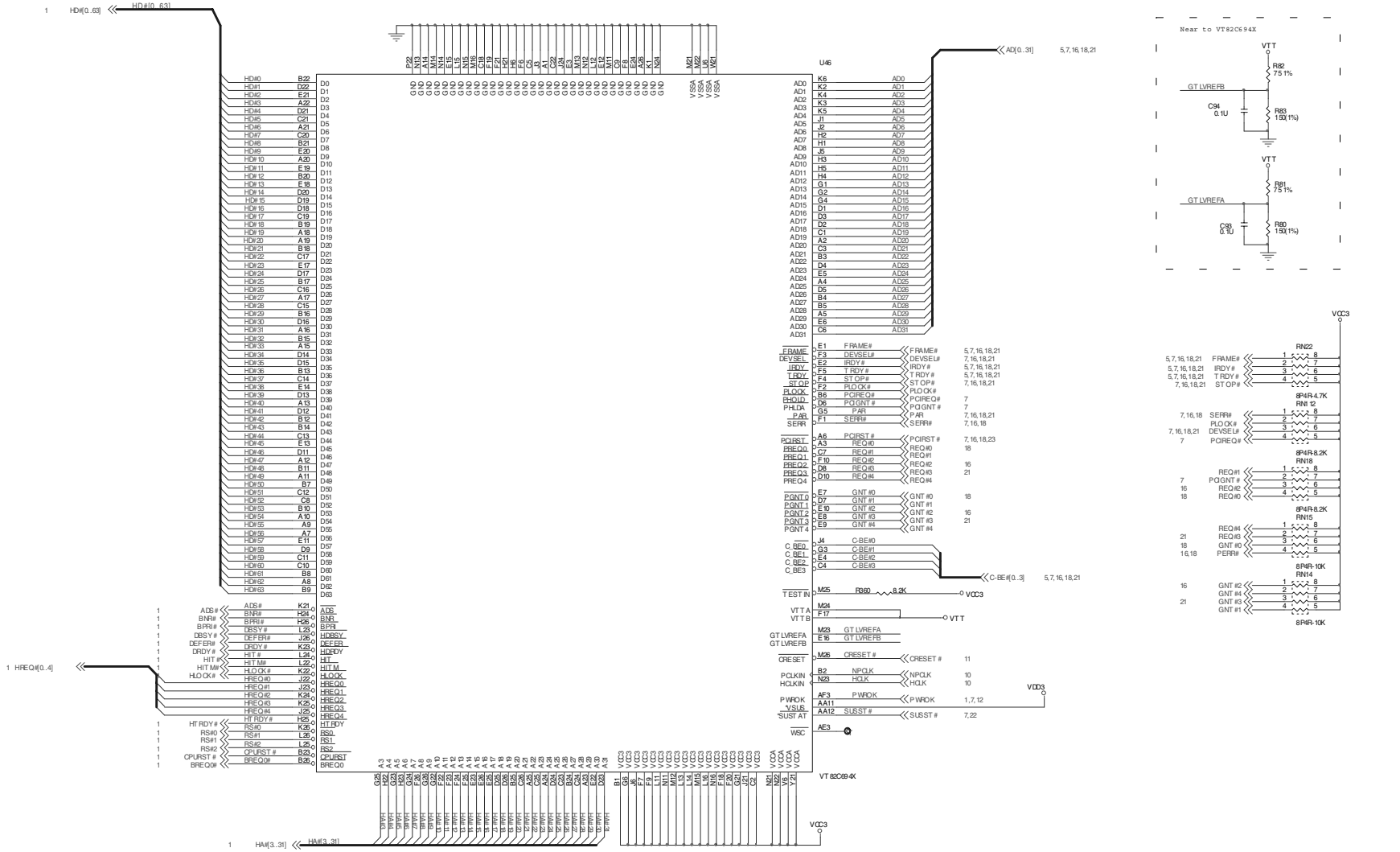
ITEM	PART NAME	PART NO	REMARK
1	KEYBOARD FOR 8500	80-85038-7G*	
2	SPEAKER COVER (R)+NET	33-8500T-A10	
3	SPEAKER COVER (L)+NET	33-8500T-A21	
4	SPEAKER + CON.	23-5A020-900	
5	COVER KNOB POM	42-62082-010	
6	SPRING FOR COVER KNOB	38-62020-020	
7	CARD BUS COVER	42-8507P-010	
8	TOP CASE+G/P+LENS+POWER KNOB	39-85V01-010	
9	EMI SPONGE(2) FOR K/B	47-35097-020	
10	EMI SPONGE(A) REAR BRL TOP B/C	47-85093-051	
11	FFC CABLE	27-9350C-850	
12	SWITCH BOARD	77-8500S-D02A	
13	SCREW	35-41120-3RA	
14	TOUCHPAD ALPS-KGDDER943A	49-00102-010	
15	FFC CABLE	27-9350C-F50	
16	GLIDE PAD HOLDER	33-85002-011	
17	SCREW	35-41025-4RA	
18	IR LENS	42-850I2-010	
19	SCREW	35-06120-6RA	
20	SPRING FOR K/B LOCK KNOB	38-00R26-010	
21	K/B LOCK KNOB	42-85082-030	
22	K/B LOCK BRACKET	33-66002-020	
23	SPONGE FOR 85 LENS	47-85092-070	
24	SPONGE FOR GLIDE PAD BRACKET	47-85092-060	
25	GASKET(W10*L25*H8.5)	47-00190-101	
26	SCREW	35-26130-6RA	
27	SCREW	35-06125-6RA	
28	K/B SPRING PLATE	38-35020-010	
29	LED BOARD	77-85V04-D02	
30	CONNECTOR COVER	42-85072-010	
31	CABLE	43-85V04-011	
32	PAPER WASHER	37-02A00-800	
33	GASKET(5*340*1.5)	47-00190-340	
34	COPPER SHEET(W20*L340)	47-85V07-010	
35	GASKET(5*110*1.5)	47-00190-B11	

Top View

Part 6: Schematics


SOCKET 370
U45A
CELERON-A
VTT
V_CPU
VCC3
Debug port
For future CPU voltage translation
71-85V00-D03
SOCKET 370
Size
Document Number
Rev
Custom
Date: Friday, October 20, 2000
Sheet 1 of 37


BSEL1
For Joshua
VTT
VCC_CORE
U45B
VID0
VID1
VID2
VID3
VID4
For Joshua
GND
VCC-CORE
VCC_1.5V
VCC_2.5V
VCC_CMOS
VREF0
VREF1
VREF2
VREF3
VREF4
VREF5
VREF6
VREF7
PLL1
PLL2
CELERON-A
EDGCTRL
CPUPRES#
THERMTRIP#
THERMDP
THERMDN
GND/BSEL1
GND/CLKREF
CLKREF
V2.5
V_CPU
CPUVREF
Intel 2-3
Cyrix 1-2
JCK1(R)
BSEL1#
ERMTRIP#
PLL1-2
PLL1-1
22uH(1210)
C447 22U(D)
RTTCTRL R76 110(1%)
SLEWCTRL R108 110(1%)
R77 2.7K
For Future Compatibility Upgrate
MAX1617(TC1066)
SMBDA
SMBCL
OS#
THERMDP
THERMDN
SOCKET 370
Size Custom
Document Number
Rev 2.0A
Date: Friday, October 20, 2000
Sheet 2 of 37



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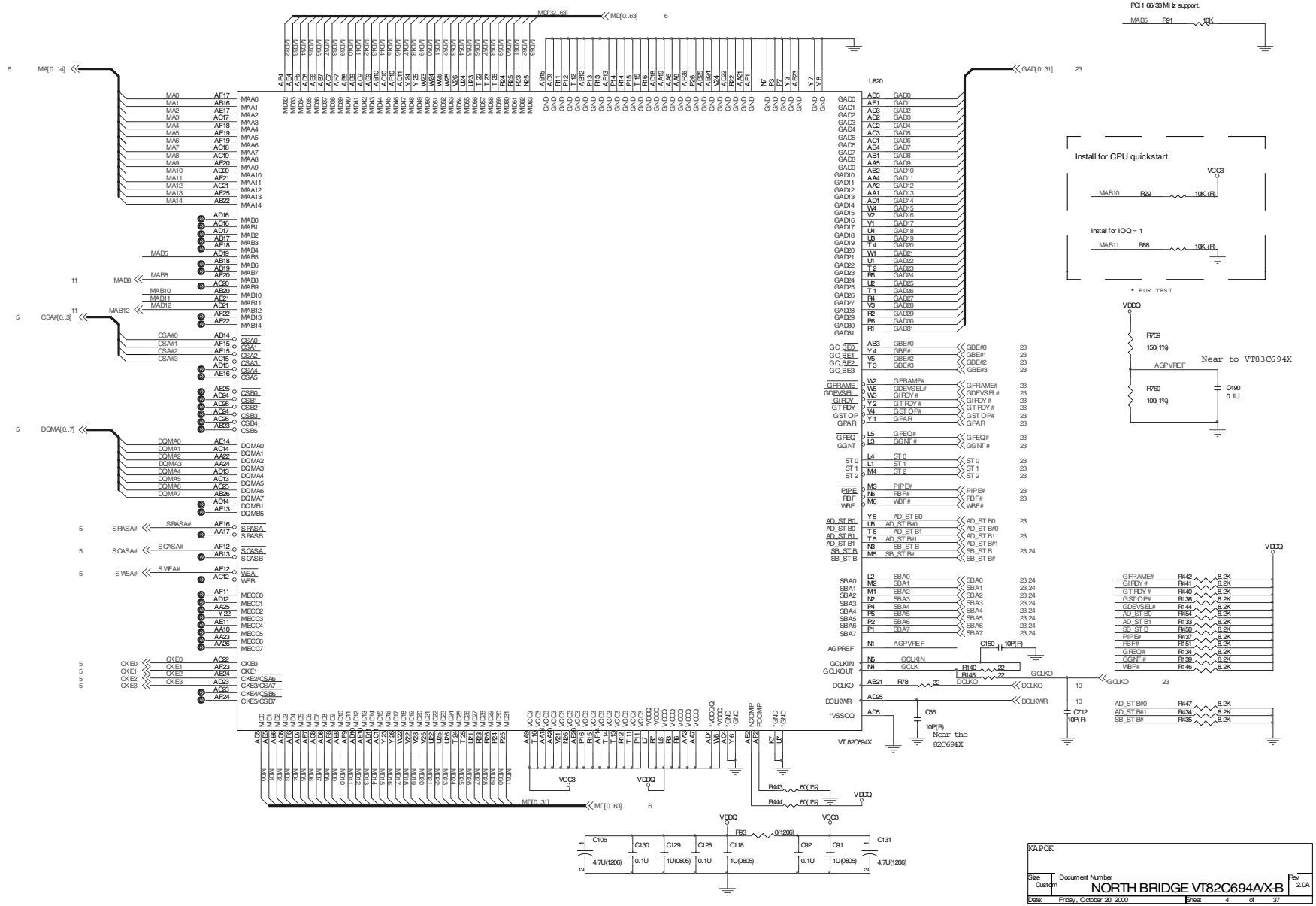

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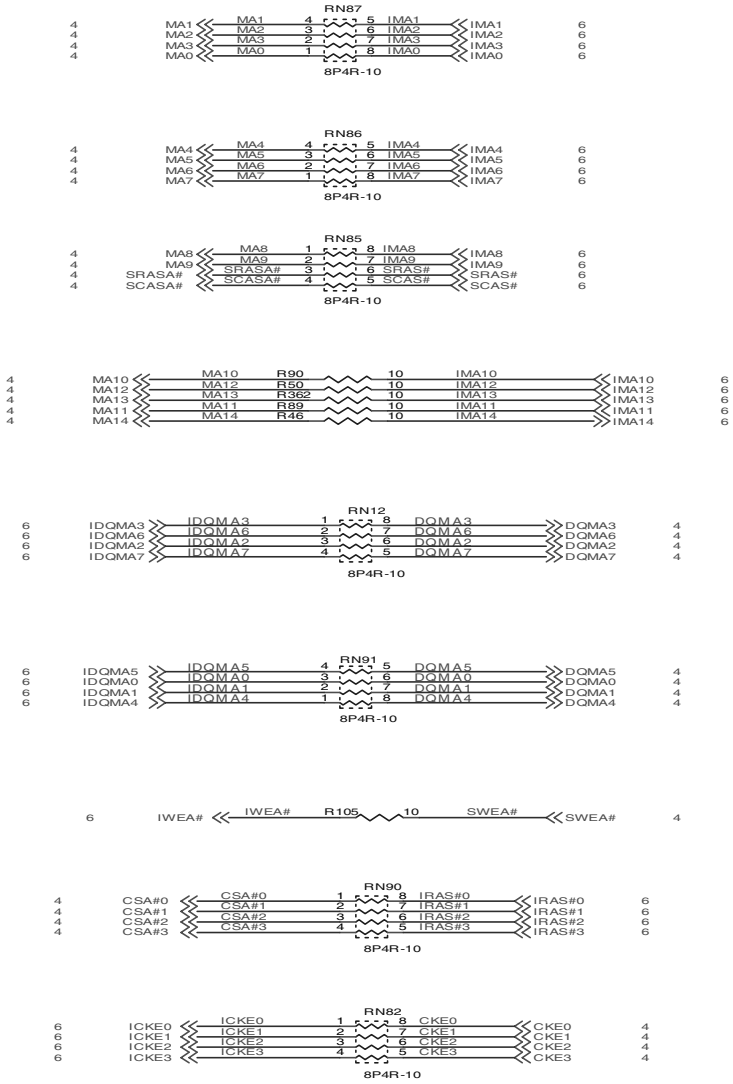

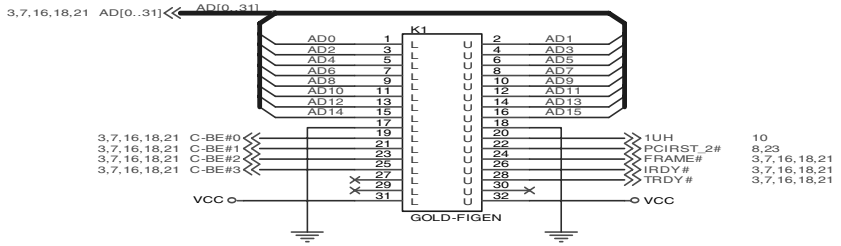

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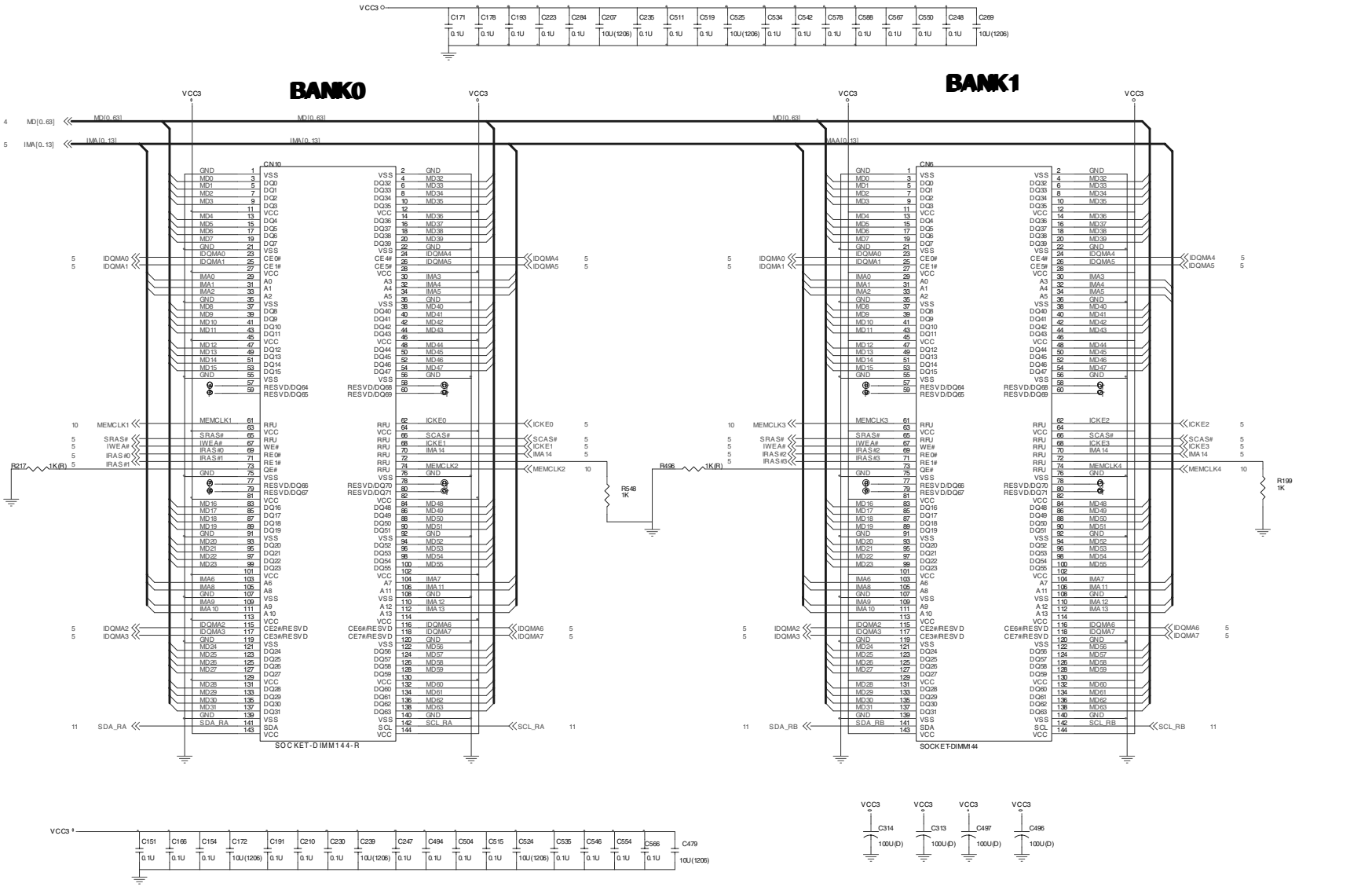
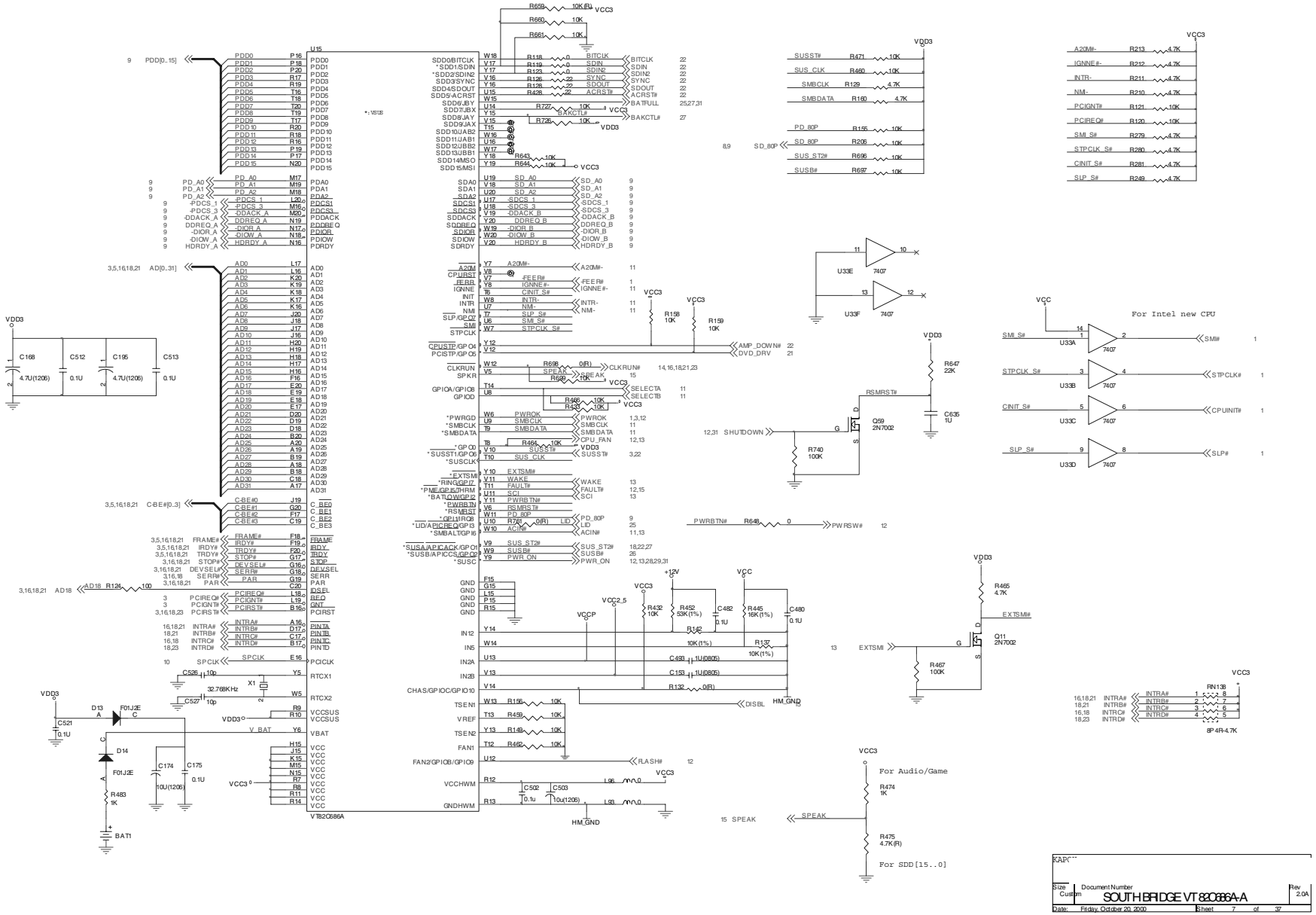
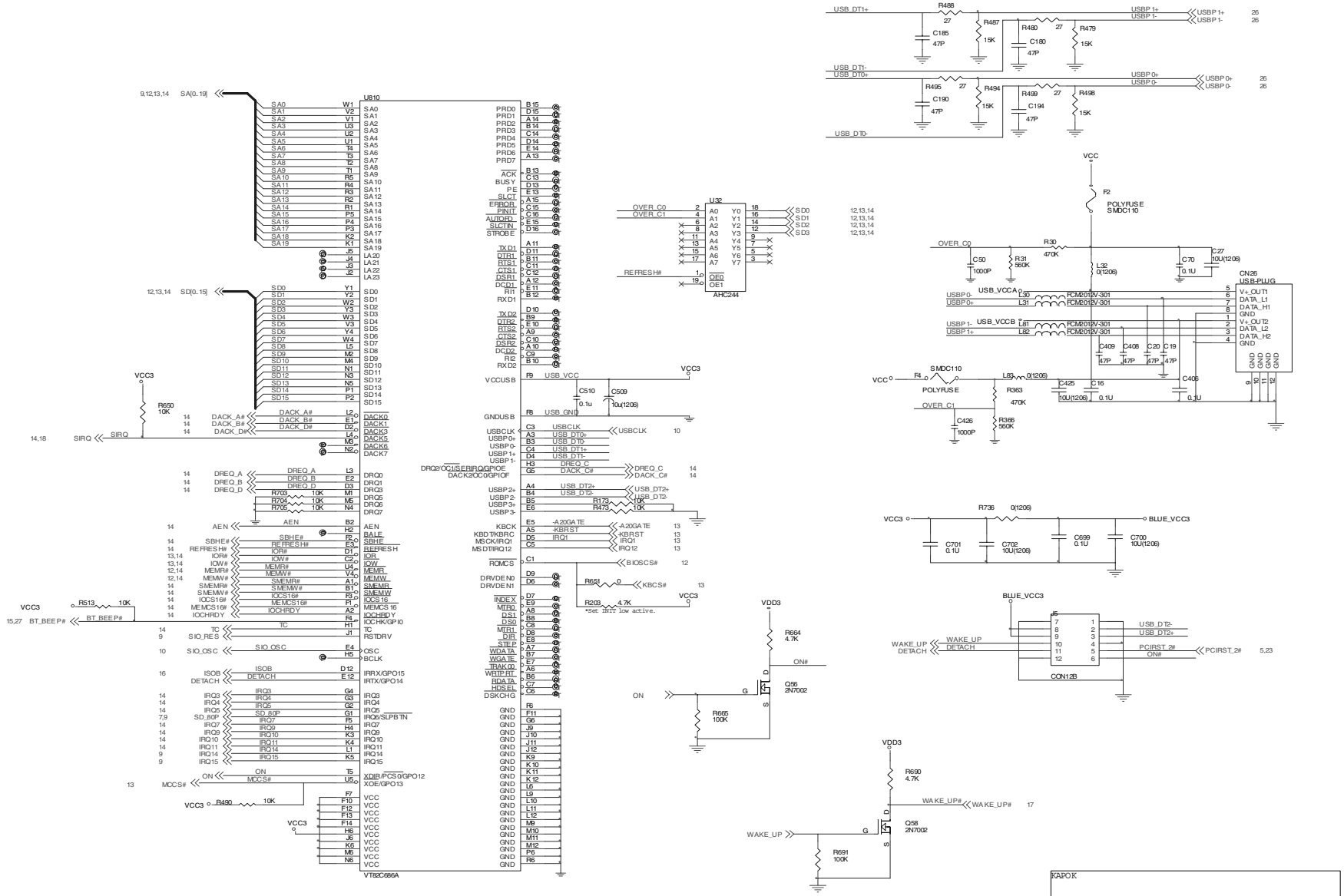

BANK0
BANK1
CN10
CN6
SOCKET-DIMM144-R
SOCKET-DIMM144
SO-DIMM
Size
Custom
Document Number
Rev
2.0A
Date: Friday, October 20, 2000
Sheet 6 of 37


U15
VT82C686A
VCC3
VDD3
VCC
+12V
VCCP
VCC2_5
HM_GND
BAT1
D14
X1
32.768KHz
For Intel new CPU
For Audio/Game
For SDD[15..0]
SOUTHBRIDGE VT82C686A-A
Size
Custom
Document Number
Rev
2.0A
Date: Friday, October 20, 2000
Sheet 7 of 37


U810
VT82C686A
U32
AHC244
SOUTH BRIDGE VT82C686A-B
KAPOK
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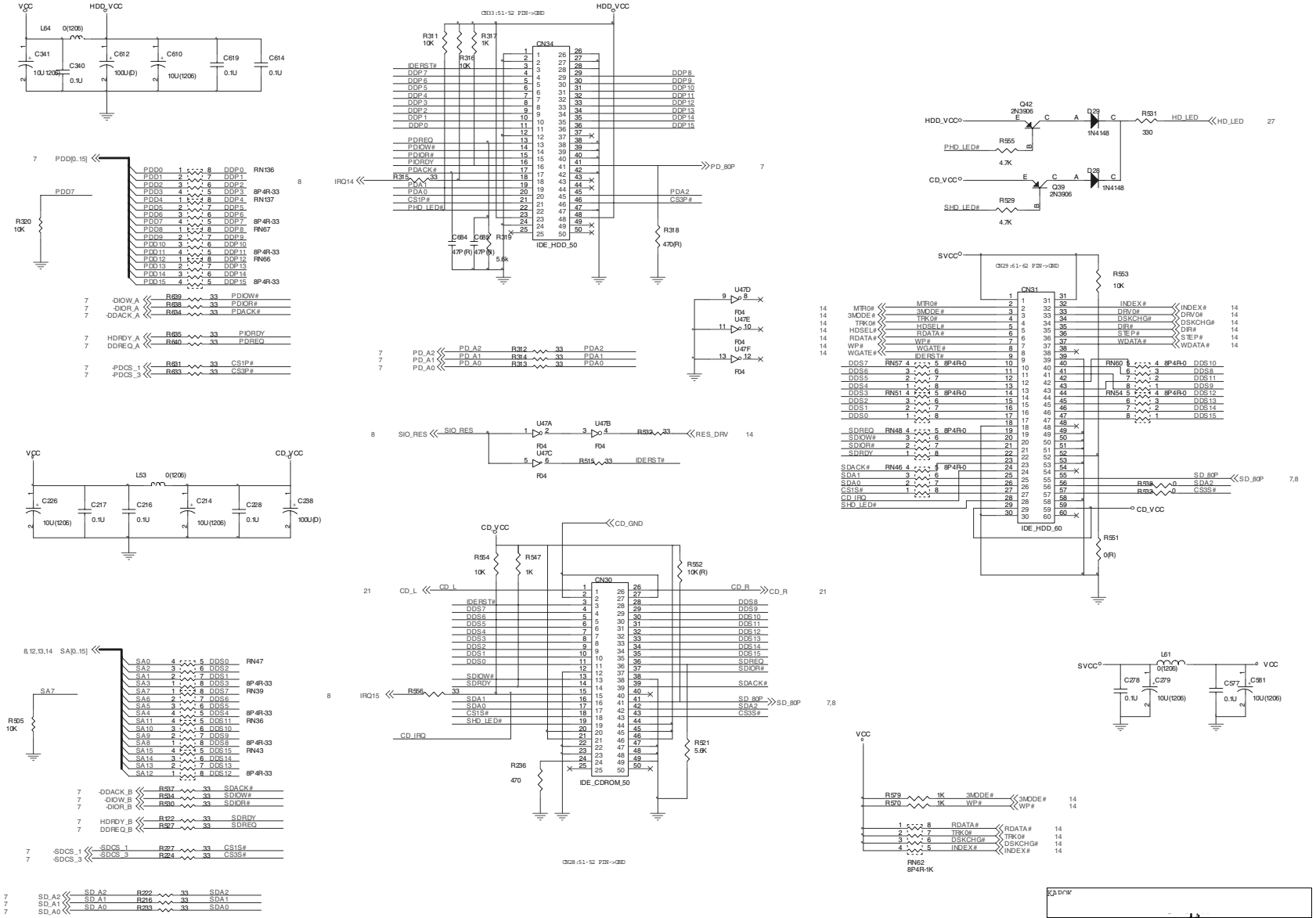
Rev 2.0A
Date: Friday, October 20, 2000
Sheet 8 of 37



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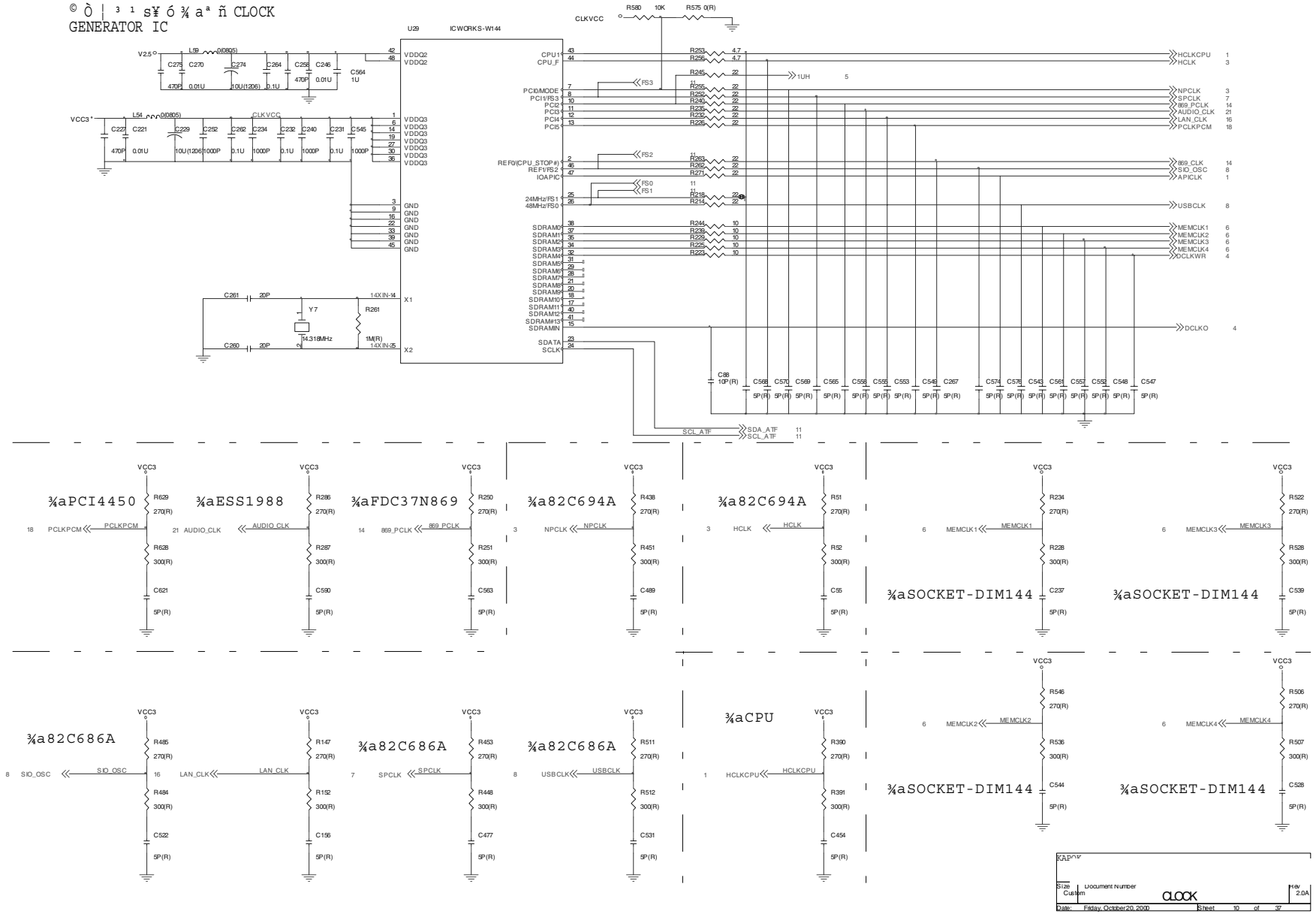
Date: Friday, October 20, 2000	Sheet 9 of 37		


© Ò | ³ ¹ s¥ ó ¾ aª ñ CLOCK
GENERATOR IC
U29 ICWORKS-W144
CLKVCC
R580 10K
R575 0(R)
V2.5
VCC3
L59 0(0805)
L54 0(0805)
C275 470P
C270 0.01U
C274 10U(1206)
C264 0.1U
C258 470P
C246 0.01U
C564 1U
C227 470P
C221 0.01U
C229 10U(1206)
C252 1000P
C262 0.1U
C234 1000P
C232 0.1U
C240 1000P
C231 0.1U
C545 1000P
VDDQ2
VDDQ3
GND
C261 20P
C260 20P
Y7 14.318MHz
R261 1M(R)
14XIN-14
14XIN-25
X1
X2
CPU1
CPU_F
PCI0/MODE
PCI1/FS3
PCI2
PCI3
PCI4
PCI5
REF0(CPU_STOP#)
REF1/FS2
IOAPIC
24MHz/FS1
48MHz/FS0
SDRAM0
SDRAM1
SDRAM2
SDRAM3
SDRAM4
SDRAM5
SDRAM6
SDRAM7
SDRAM8
SDRAM9
SDRAM10
SDRAM11
SDRAM12
SDRAM13
SDRAMIN
SDATA
SCLK
FS0
FS1
FS2
FS3
1UH
R253 4.7
R256 4.7
R245 22
R255 22
R254 22
R249 22
R235 22
R232 22
R226 22
R263 22
R262 22
R271 22
R218 22
R214 22
R244 10
R239 10
R229 10
R225 10
R223 10
HCLKCPU
HCLK
NPCLK
SPCLK
869_PCLK
AUDIO_CLK
LAN_CLK
PCLKPCM
869_CLK
SIO_OSC
APICLK
USBCLK
MEMCLK1
MEMCLK2
MEMCLK3
MEMCLK4
DCLKWR
DCLKO
SCL_ATF
SDA_ATF
C88 10P(R)
C568 5P(R)
C570 5P(R)
C569 5P(R)
C565 5P(R)
C558 5P(R)
C555 5P(R)
C553 5P(R)
C546 5P(R)
C267 5P(R)
C574 5P(R)
C576 5P(R)
C543 5P(R)
C561 5P(R)
C557 5P(R)
C552 5P(R)
C548 5P(R)
C547 5P(R)
¾aPCI4450
R629 270(R)
R628 300(R)
C621 5P(R)
PCLKPCM
¾aESS1988
R286 270(R)
R287 300(R)
C590 5P(R)
AUDIO_CLK
¾aFDC37N869
R250 270(R)
R251 300(R)
C563 5P(R)
869_PCLK
¾a82C694A
R438 270(R)
R451 300(R)
C489 5P(R)
NPCLK
¾a82C694A
R51 270(R)
R52 300(R)
C55 5P(R)
HCLK
¾aSOCKET-DIM144
R234 270(R)
R228 300(R)
C237 5P(R)
MEMCLK1
¾aSOCKET-DIM144
R522 270(R)
R528 300(R)
C539 5P(R)
MEMCLK3
¾a82C686A
R485 270(R)
R484 300(R)
C522 5P(R)
SIO_OSC
¾a82C686A
R147 270(R)
R152 300(R)
C156 5P(R)
LAN_CLK
¾a82C686A
R453 270(R)
R448 300(R)
C477 5P(R)
SPCLK
¾a82C686A
R511 270(R)
R512 300(R)
C531 5P(R)
USBCLK
¾aCPU
R390 270(R)
R391 300(R)
C454 5P(R)
HCLKCPU
¾aSOCKET-DIM144
R546 270(R)
R536 300(R)
C544 5P(R)
MEMCLK2
¾aSOCKET-DIM144
R506 270(R)
R507 300(R)
C528 5P(R)
MEMCLK4
Size Custom
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Rev 2.0A
Date: Friday, October 20, 2000
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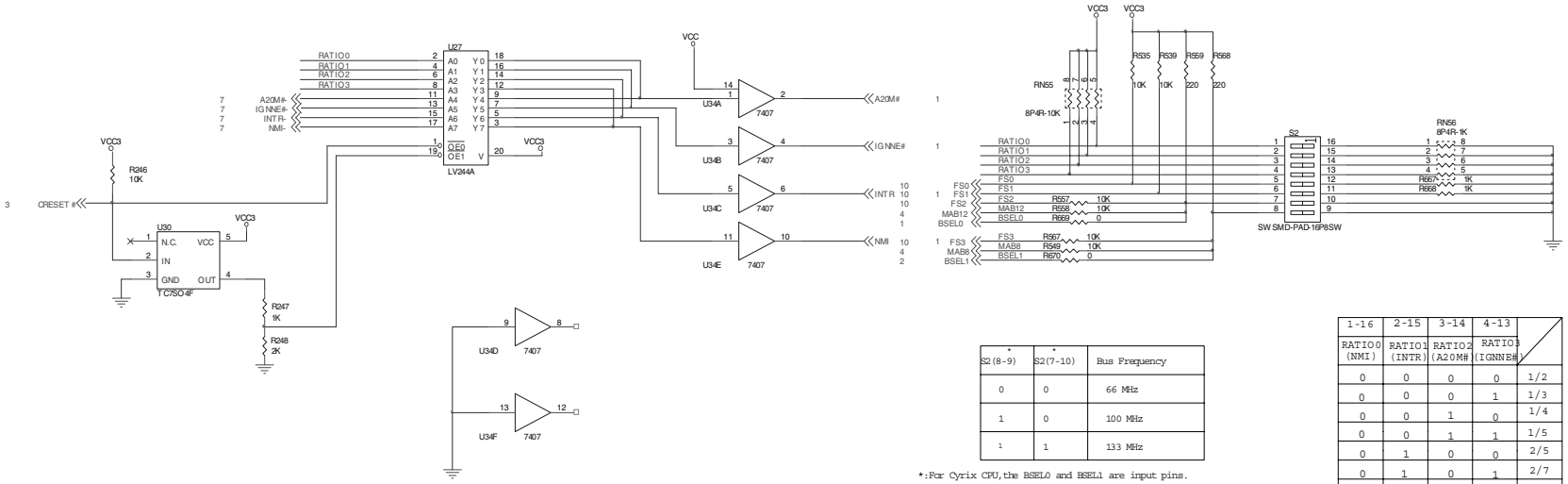
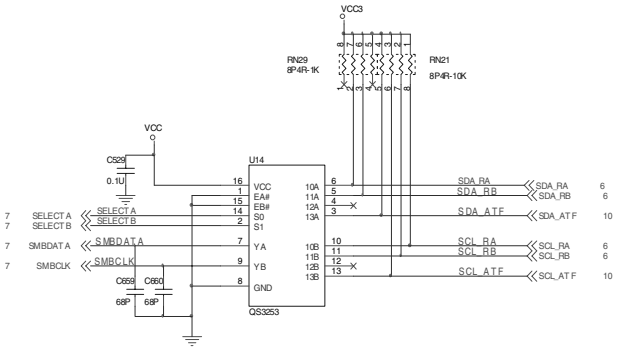
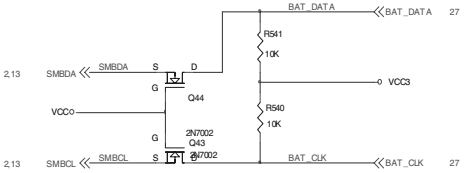


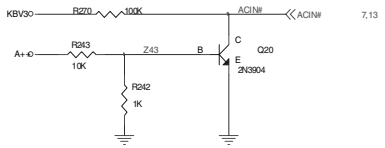
S2(8-9)	S2(7-10)	Bus Frequency
0	0	66 MHz
1	0	100 MHz
1	1	133 MHz

*:For Cyrix CPU, the BSEL0 and BSEL1 are input pins.

1-16	2-15	3-14	4-13	
RATIO0 (NMI)	RATIO1 (INTR)	RATIO2 (A20M#)	RATIO3 (IGNNE#)	
0	0	0	0	1/2
0	0	0	1	1/3
0	0	1	0	1/4
0	0	1	1	1/5
0	1	0	0	2/5
0	1	0	1	2/7
0	1	1	0	2/9
0	1	1	1	2/11
1	0	0	0	1/6
1	0	0	1	1/7
1	0	1	0	1/8
1	0	1	1	Reserved
1	1	0	0	2/13
1	1	0	1	2/15
1	1	1	0	2/3
1	1	1	1	1/2







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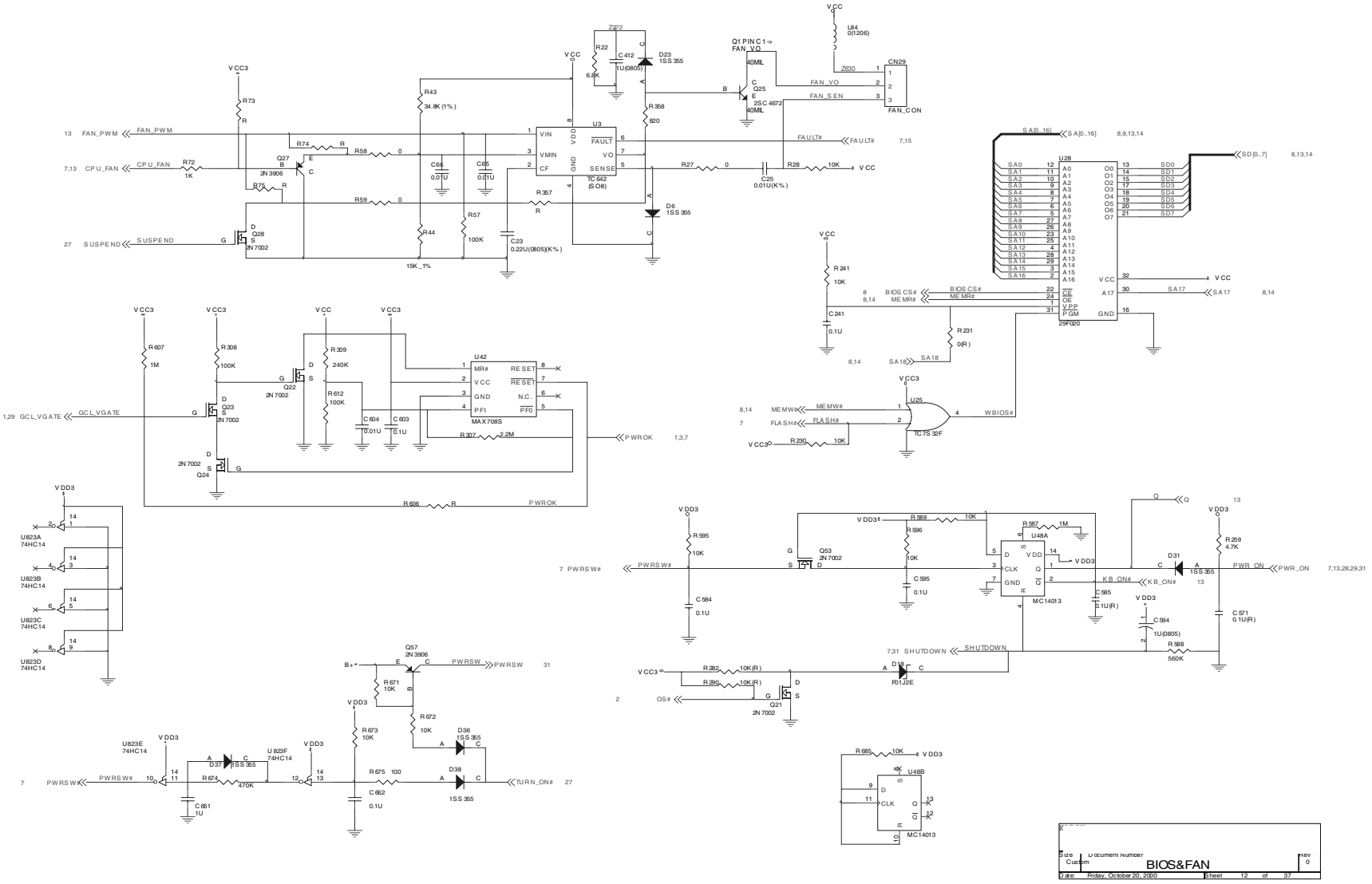
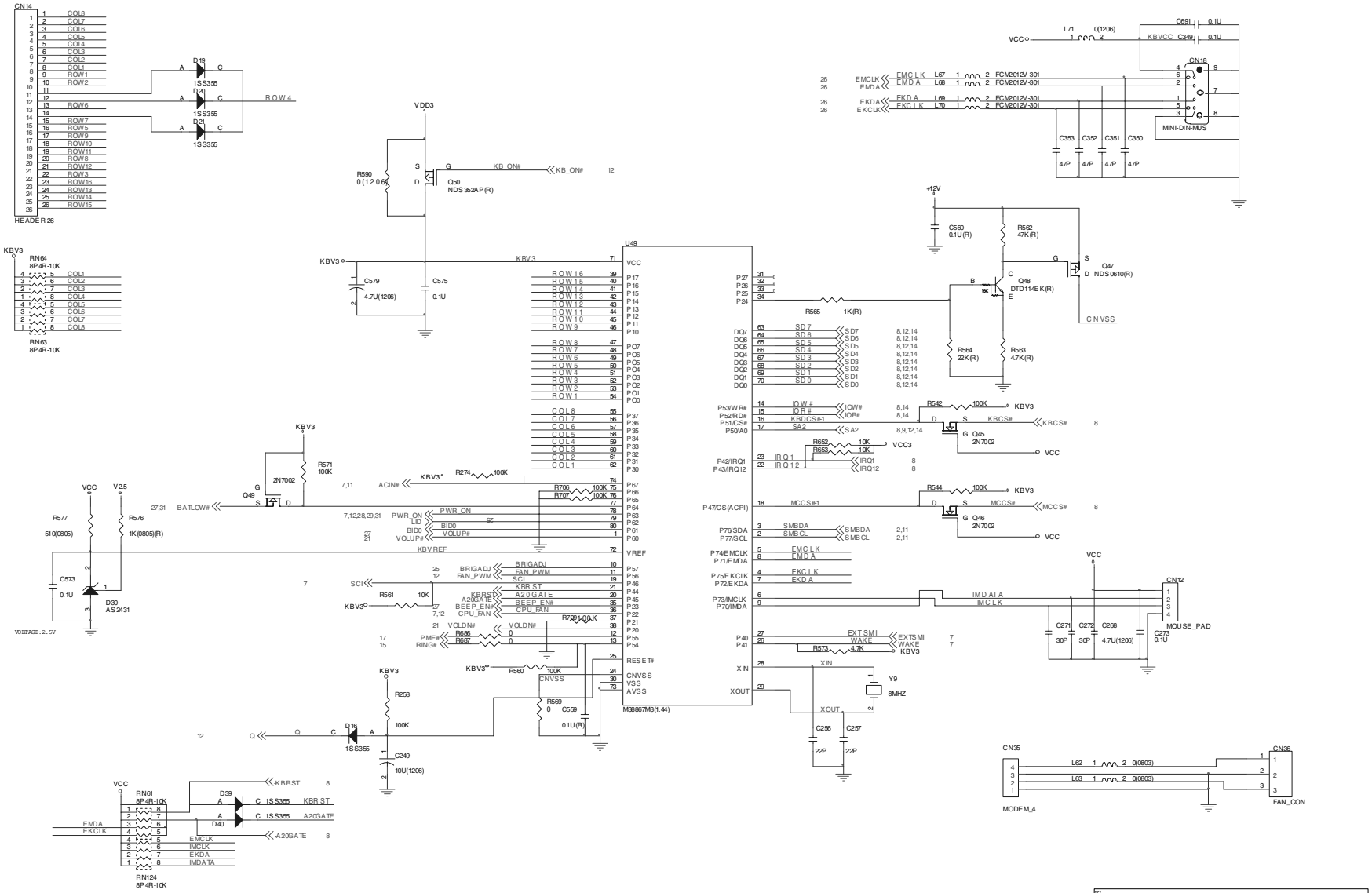
Date: Friday, October 20, 2000	Sheet 11 of 37		


FAN_PWM
CPU_FAN
SUSPEND
GCL_VGATE
PWROK
PWRSW#
TURN_ON#
FAULT#
SHUTDOWN
KB_ON#
PWR_ON
BIOS&FAN
Size: Custom
Document Number
Rev: 0
Date: Friday, October 20, 2000
Sheet 12 of 37


CN14
HEADER 26
ROW4
D19
D20
D21
1SS355
VDD3
R590
0 (1206)
Q50
NDS352AP(R)
KB_ON#
KBV3
C579
4.7U(1206)
C575
0.1U
U49
M38867MB(1.44)
RN64
8P4R-10K
RN63
8P4R-10K
R571
100K
2N7002
Q49
BATLOW#
ACIN#
R274
100K
R577
510(0805)
R576
1K(0805)(R)
VCC
V2.5
C573
0.1U
D30
AS2431
VOLTAGE:2.5V
R561
10K
SCI
KBRST
A20GATE
BEEP_EN#
CPU_FAN
VOLDN#
PME#
RING#
R685
R687
R560
100K
CNVSS
R258
100K
D16
1SS355
C249
10U(1206)
R569
0
C559
0.1U(R)
RESET#
XIN
XOUT
Y9
8MHZ
C256
C257
22P
RN61
8P4R-10K
D39
D40
RN124
8P4R-10K
EMDA
EKCLK
EMCLK
IMCLK
EKDA
IMDATA
L71
0(1206)
C691
0.1U
KBVCC
C349
0.1U
CN18
MINI-DIN-MUS
C353
C352
C351
C350
47P
L67
L68
L69
L70
FCM2012V-301
C560
0.1U(R)
R562
47K(R)
+12V
Q47
NDS0610(R)
Q48
DTD114EK(R)
CNVSS
R565
1K(R)
R564
22K(R)
R563
4.7K(R)
R542
100K
KBCS#
Q45
2N7002
R652
R653
10K
VCC3
R544
MCCS#
Q46
2N7002
R573
4.7K
CN12
MOUSE_PAD
C271
C272
C268
30P
4.7U(1206)
C273
0.1U
CN35
MODEM_4
CN36
FAN_CON
L62
L63
0(0803)
Size
Custom
Document Number
KEYBOATD CONTROL
Rev
0
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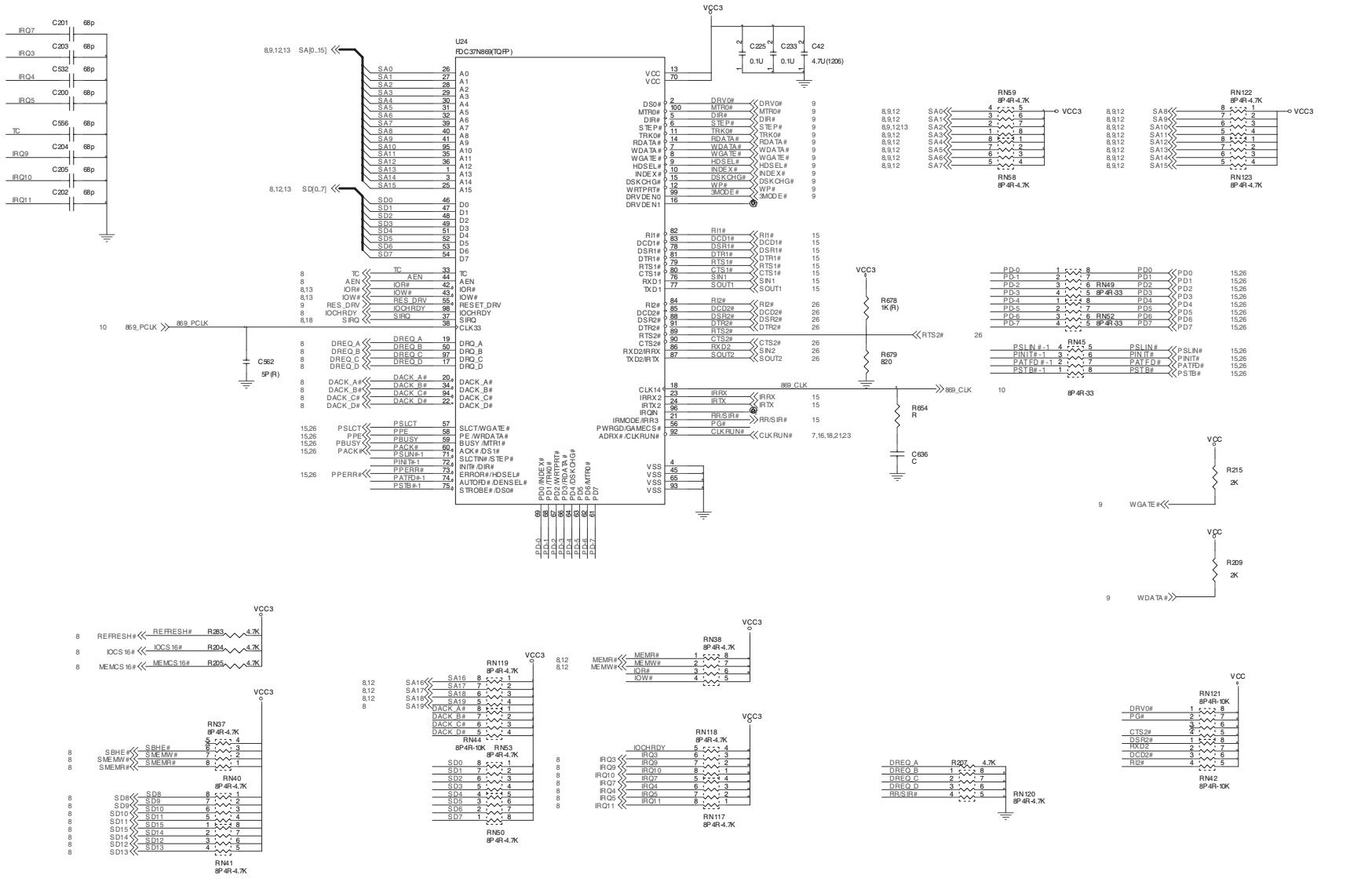
37



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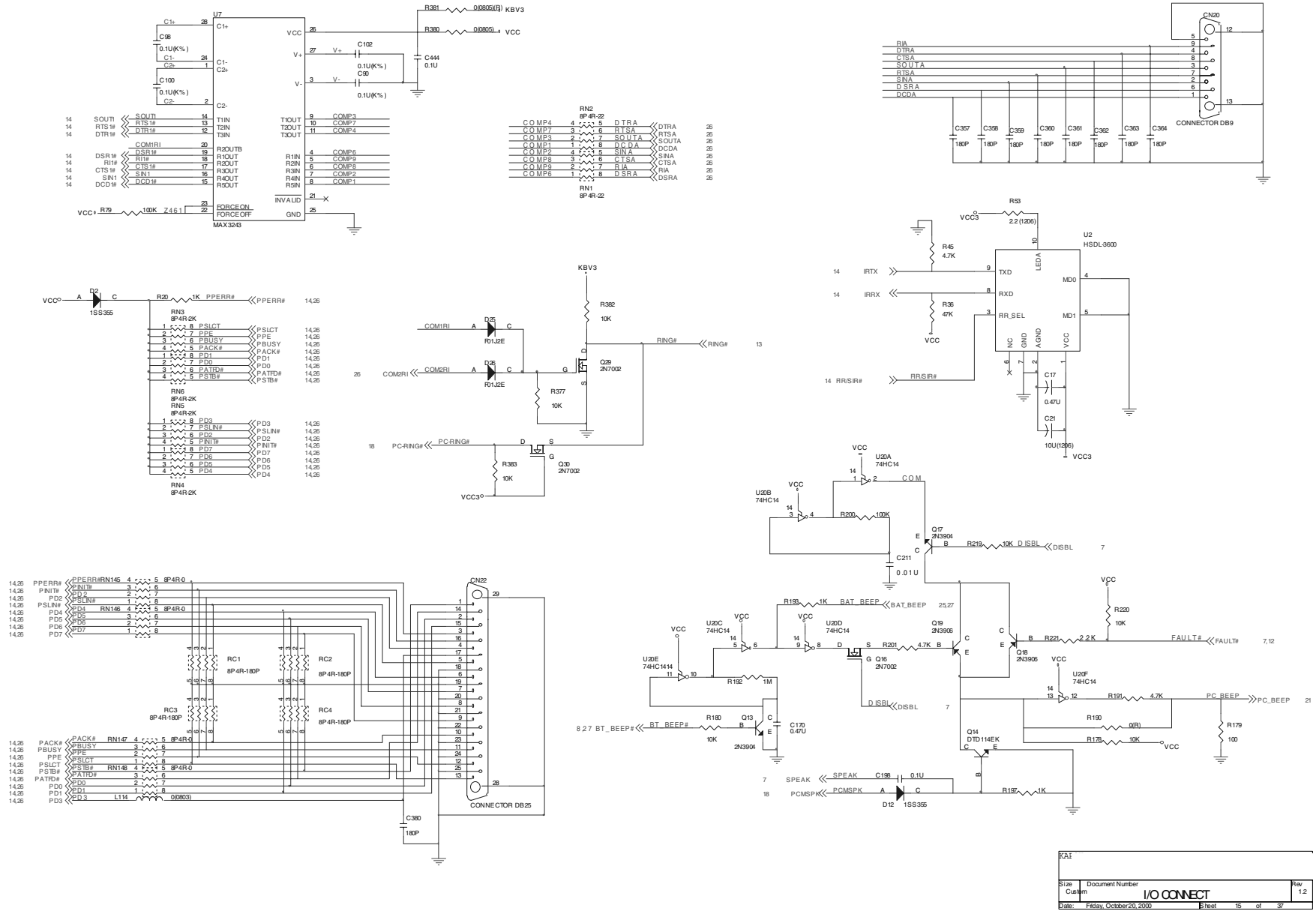
Date: Friday, October 20, 2000		Sheet 14 of 37	



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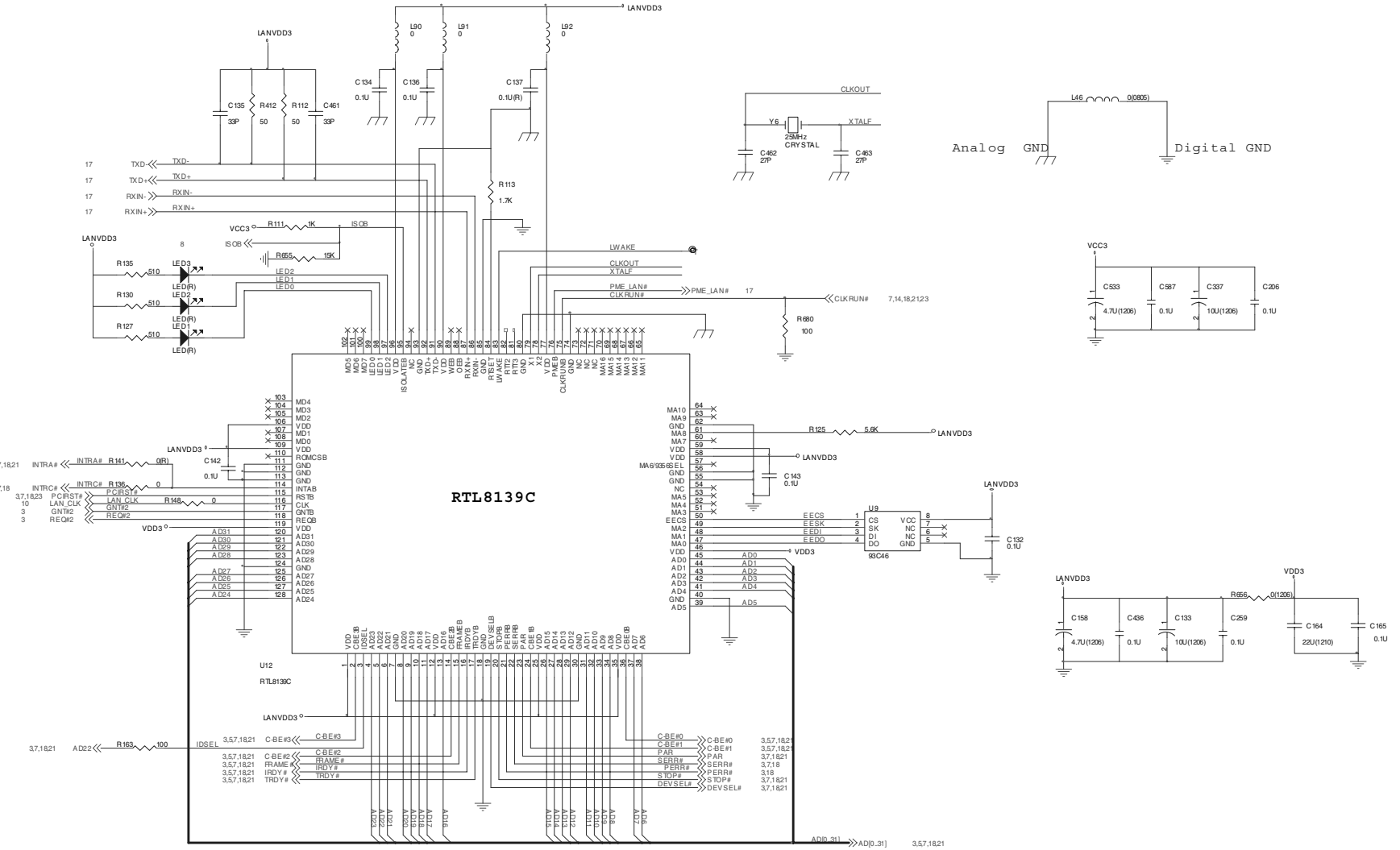
Date: Friday, October 20, 2000	Sheet 15 of 37	



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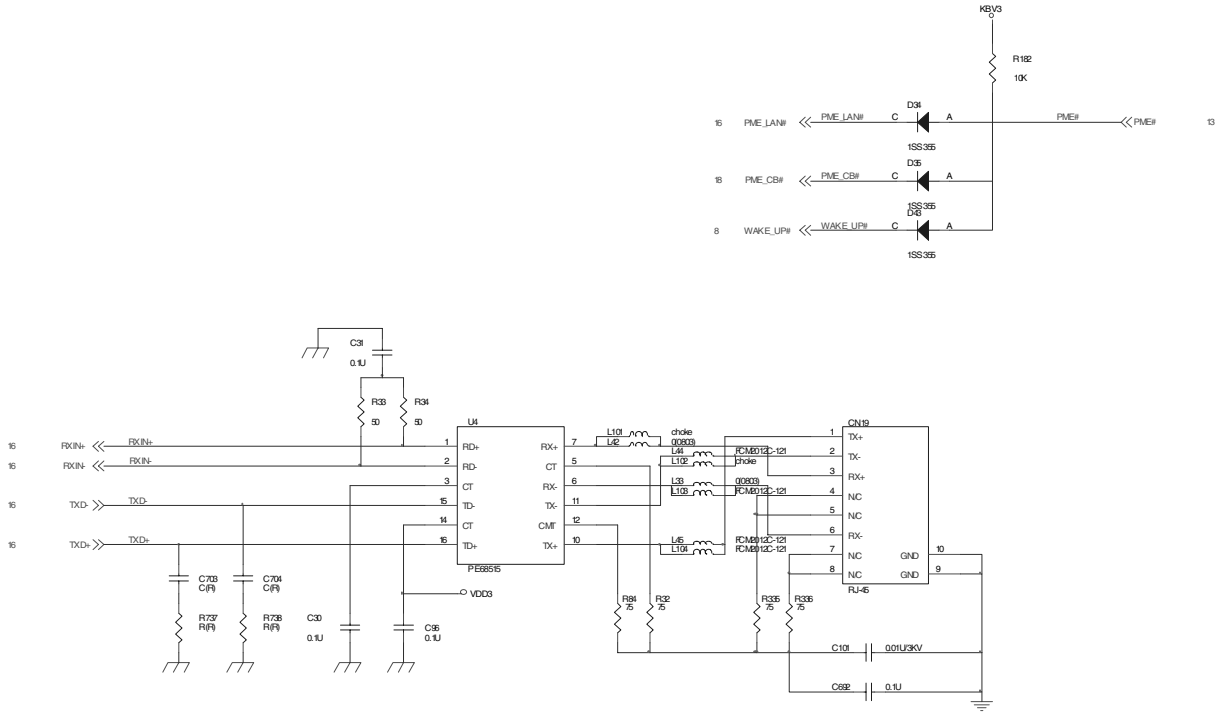

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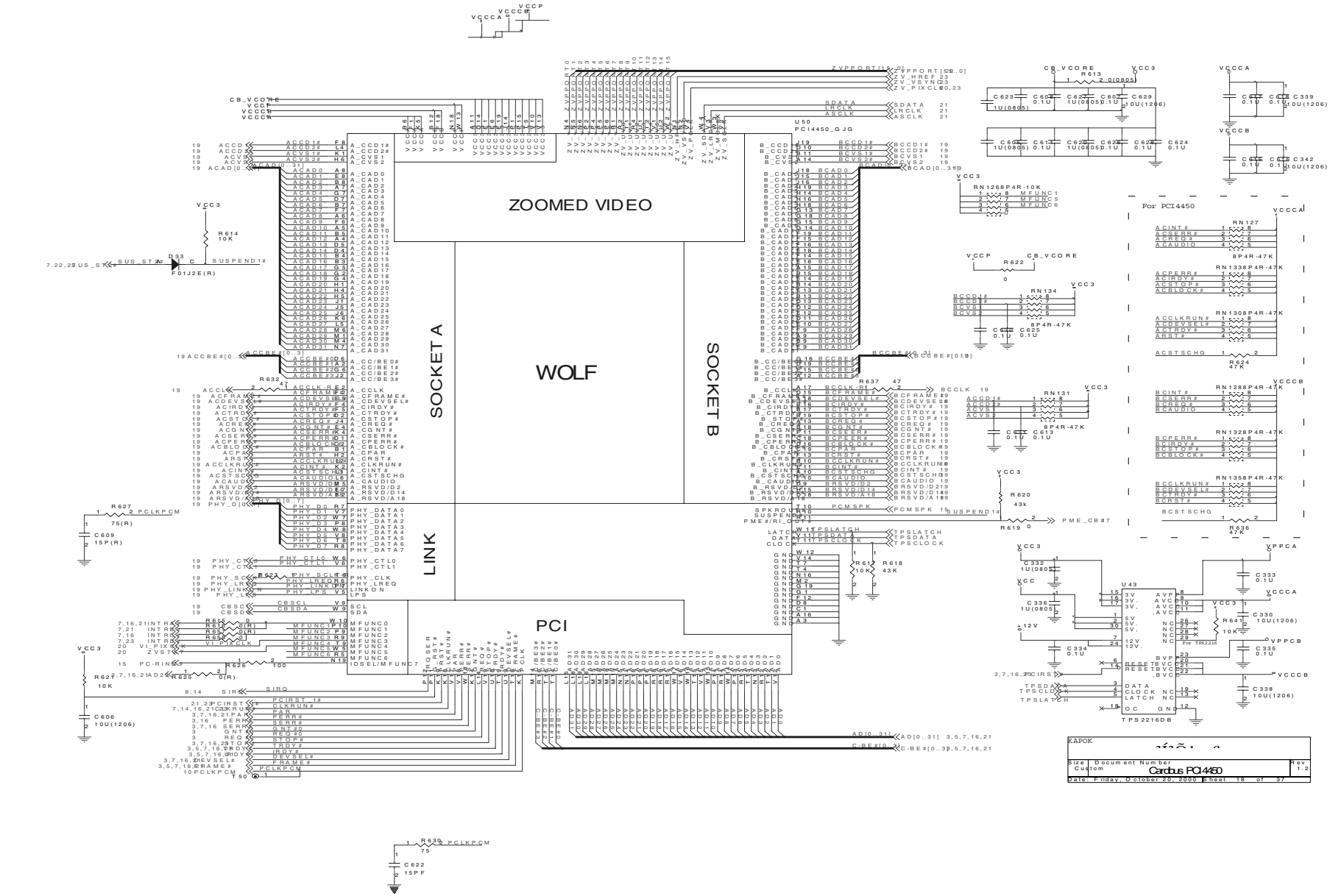
ZOOMED VIDEO
SOCKET A
SOCKET B
WOLF
LINK
PCI
U50
PCI4450_GJG
For PCI4450
U43
TPS2216DB
Cardbus PCI4450
Size
Custom
Document Number
Rev
1.2
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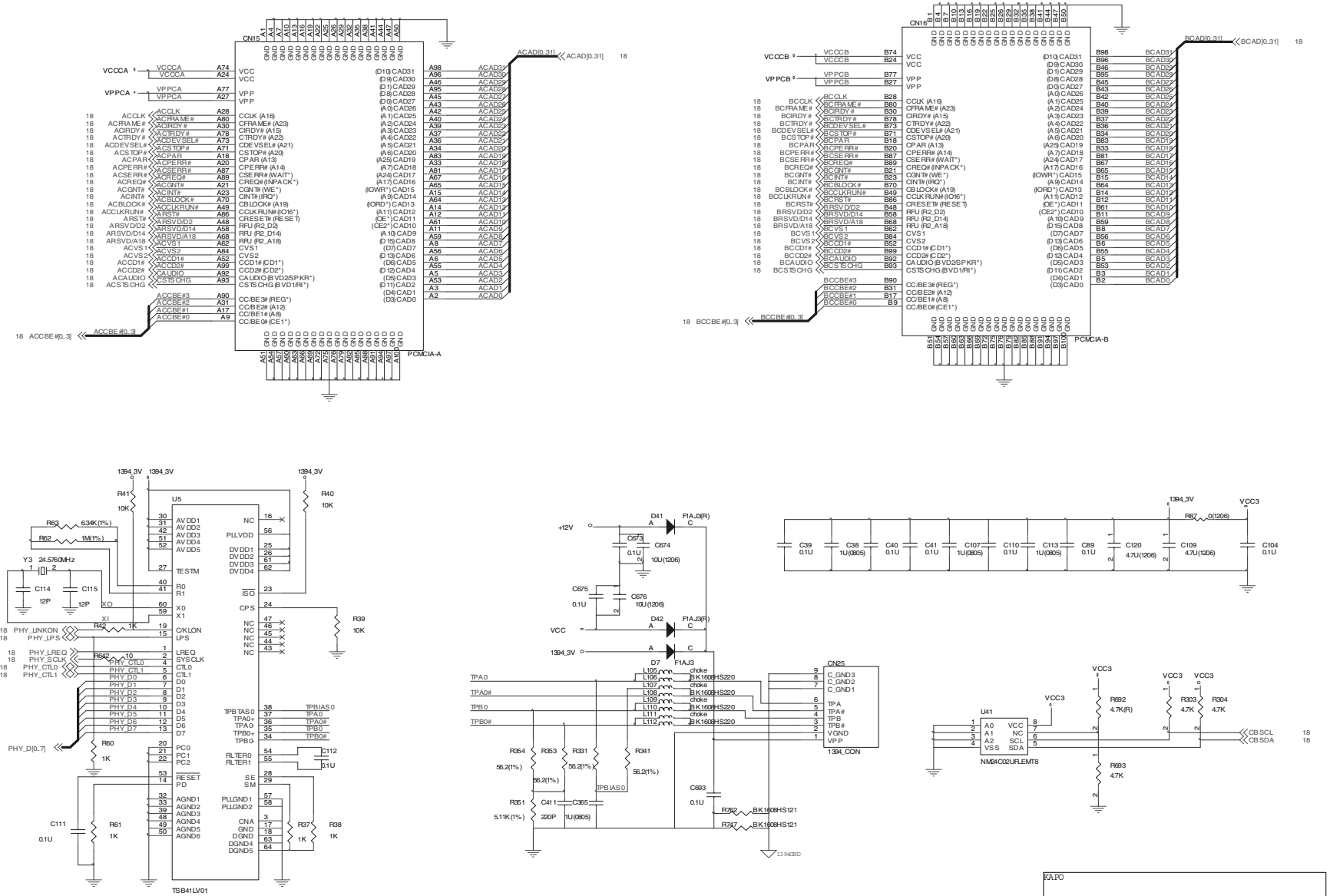
37


CN15
PCMCIA-A
CN16
PCMCIA-B
TSB41LV01
1394_CON
NM24C02UFLEMT8
KAPO
Ti1394&PCMCIA SOCKET A/B
Size
Custom
Document Number
Rev
1.2
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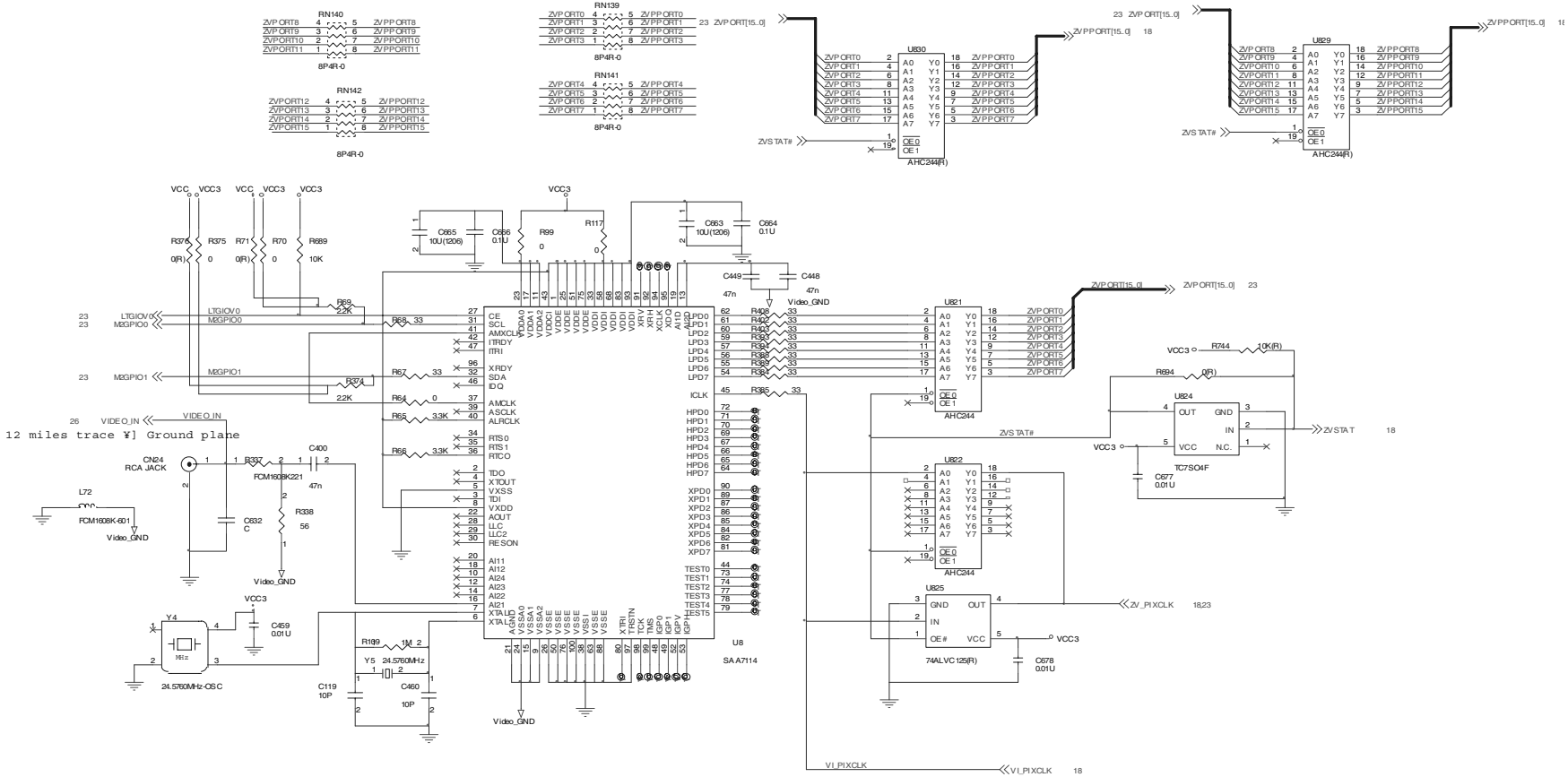

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Size	Document Number	Rev
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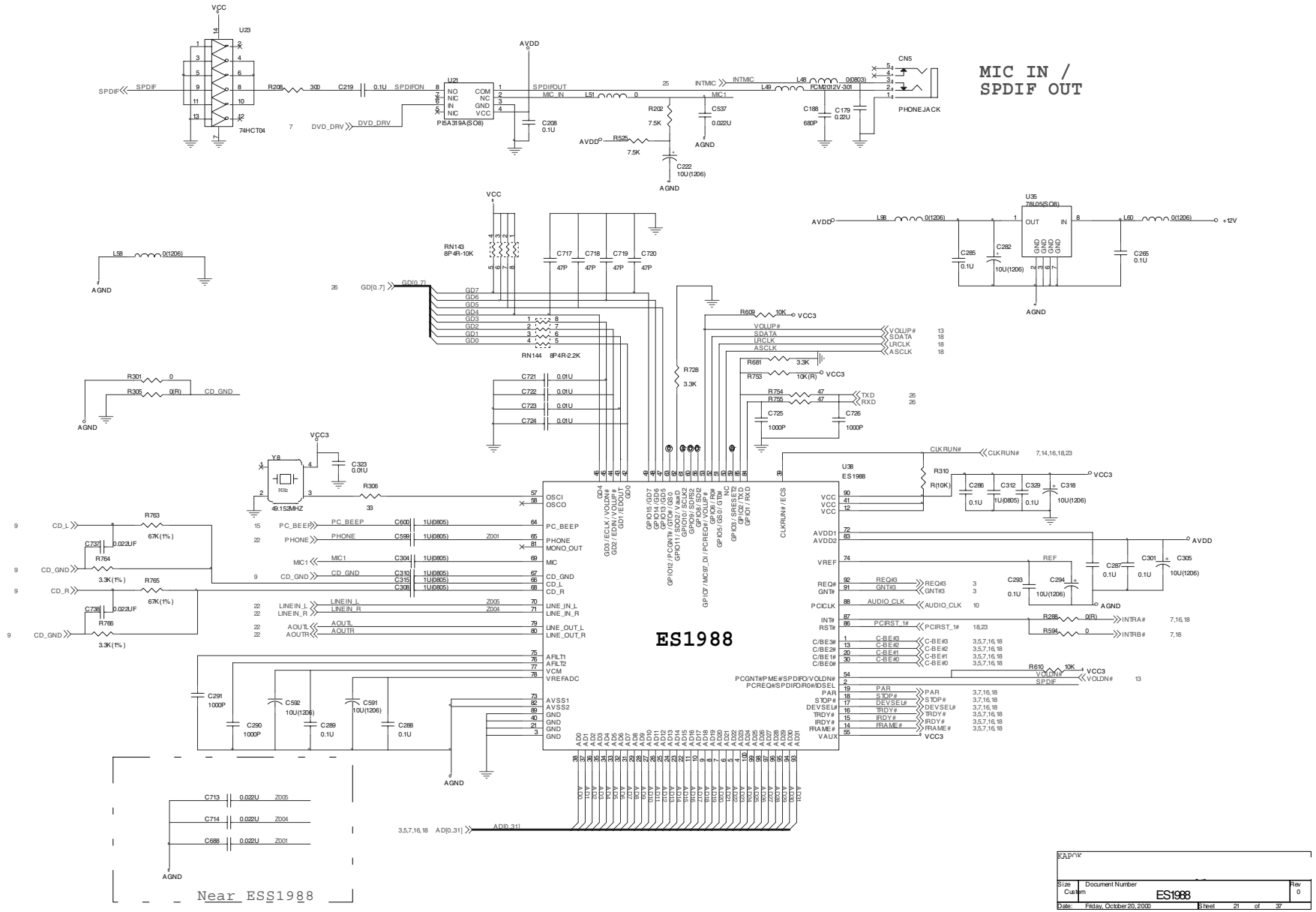
Date:	Friday, October 20, 2000	Sheet 20 of 37


MIC IN /
SPDIF OUT
ES1988
Near ESS1988
PHONEJACK
PS5A319A(SO8)
74HCT04
78L05(SO8)
FCM2012V-301
RN143 8P4R-10K
RN144 8P4R-2.2K
49.152MHZ
SPDIF
SPDIFON
SPDIFOUT
MIC_IN
INTMIC
MIC1
DVD_DRV
CD_GND
CD_L
CD_R
PC_BEEP
PHONE
LINEIN_L
LINEIN_R
AOUTL
AOUTR
VOLUP#
SDATA
LRCLK
ASCLK
TXD
RXD
CLKRUN#
REQ#
GNT#
PCICLK
INT#
RST#
C/BE3#
C/BE2#
C/BE1#
C/BE0#
PAR
STOP#
DEVSEL#
TRDY#
IRDY#
FRAME#
VAUX
VOLDN#
SPDIF
INTRA#
INTRB#
AD[0..31]
VCC
VCC3
AVDD
AGND
+12V
Size
Custom
Document Number
ES1988
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0
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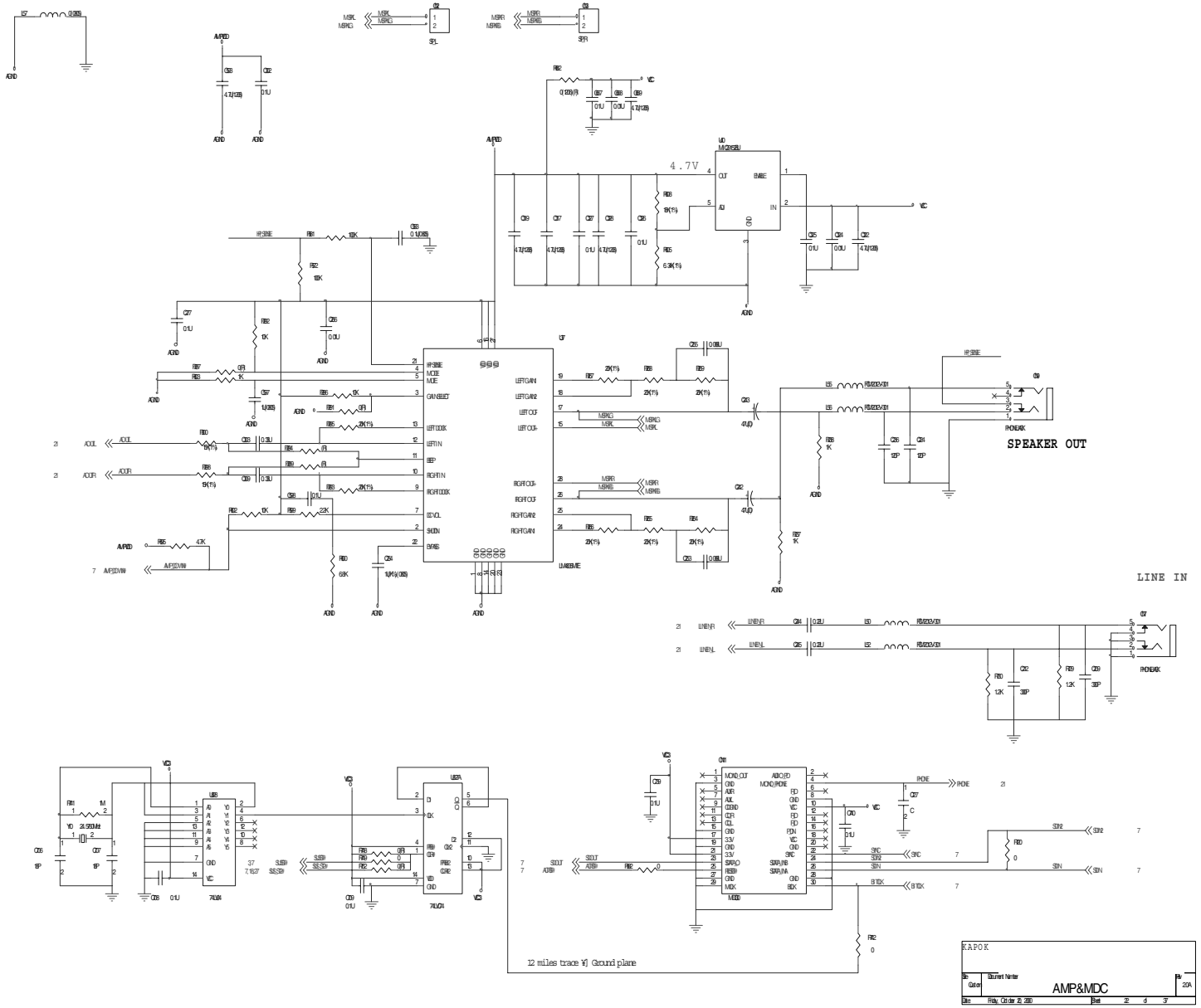
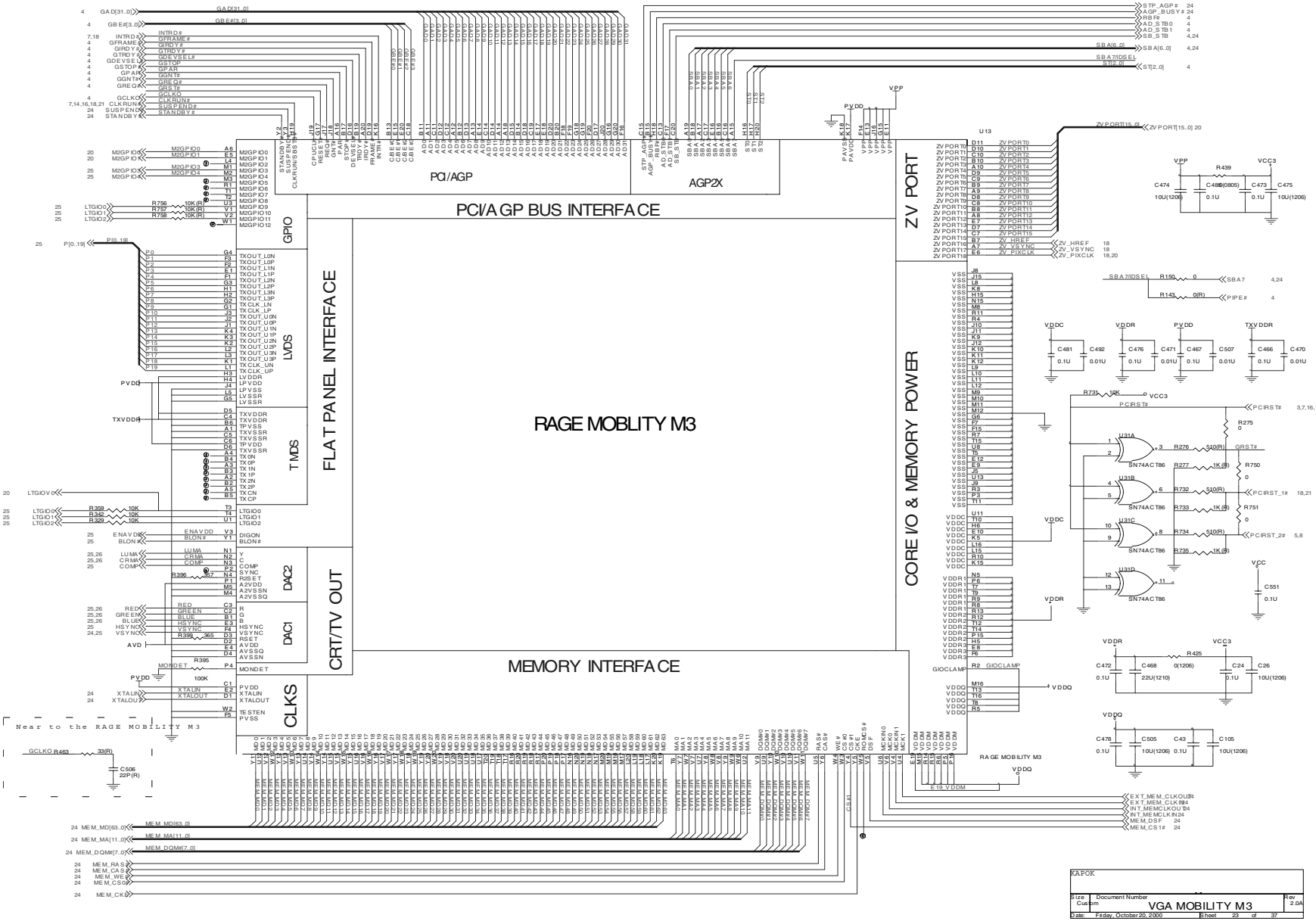
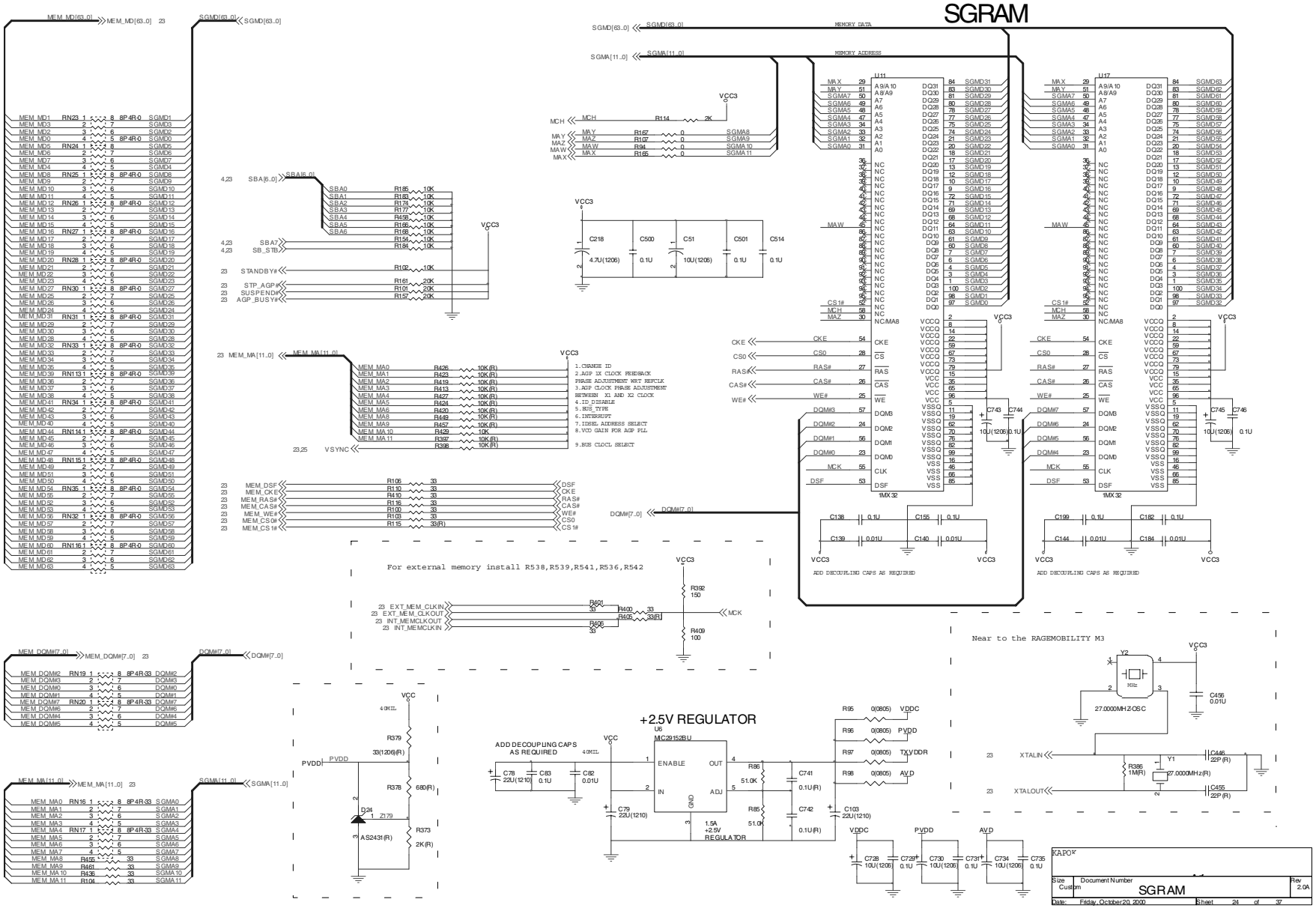
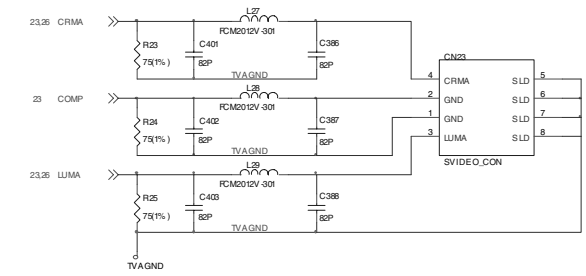
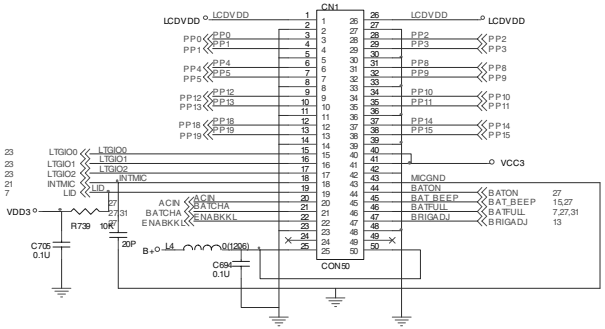
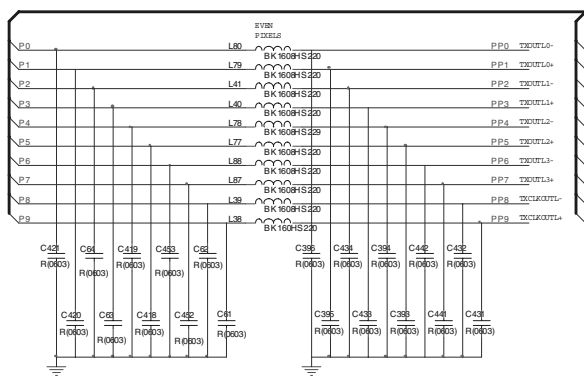

4.7V
SPEAKER OUT
LINE IN
12 miles trace ¥] Ground plane
KAPOK
AMP&MDC

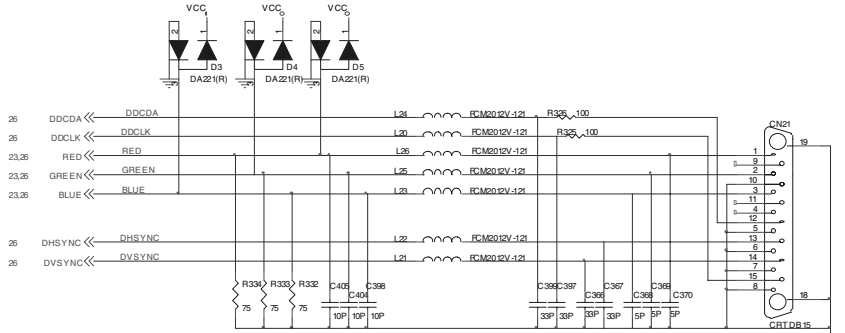

RAGE MOBLITY M3
PCI/AGP BUS INTERFACE
PCI/AGP
AGP2X
ZV PORT
CORE I/O & MEMORY POWER
FLAT PANEL INTERFACE
CRT/TV OUT
MEMORY INTERFACE
GPIO
LVDS
TMDS
DAC2
DAC1
CLKS
VGA MOBILITY M3
KAPOK

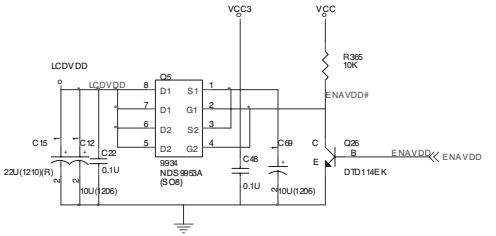

SGRAM
MEMORY DATA
MEMORY ADDRESS
U11
U17
1MX32
ADD DECOUPLING CAPS AS REQUIRED
For external memory install R538,R539,R541,R536,R542
+2.5V REGULATOR
1.5A +2.5V REGULATOR
ADD DECOUPLING CAPS AS REQUIRED
Near to the RAGEMOBILITY M3
27.0000MHZ-OSC
KAPOK
SGRAM
Friday, October 20, 2000

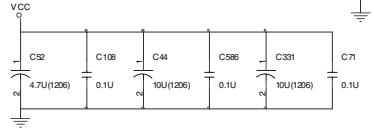


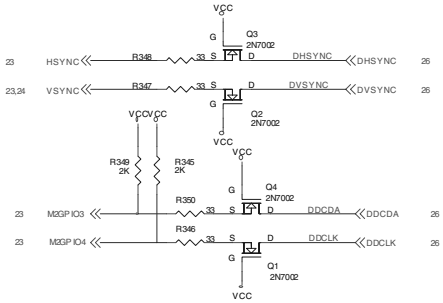


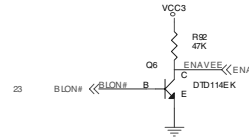












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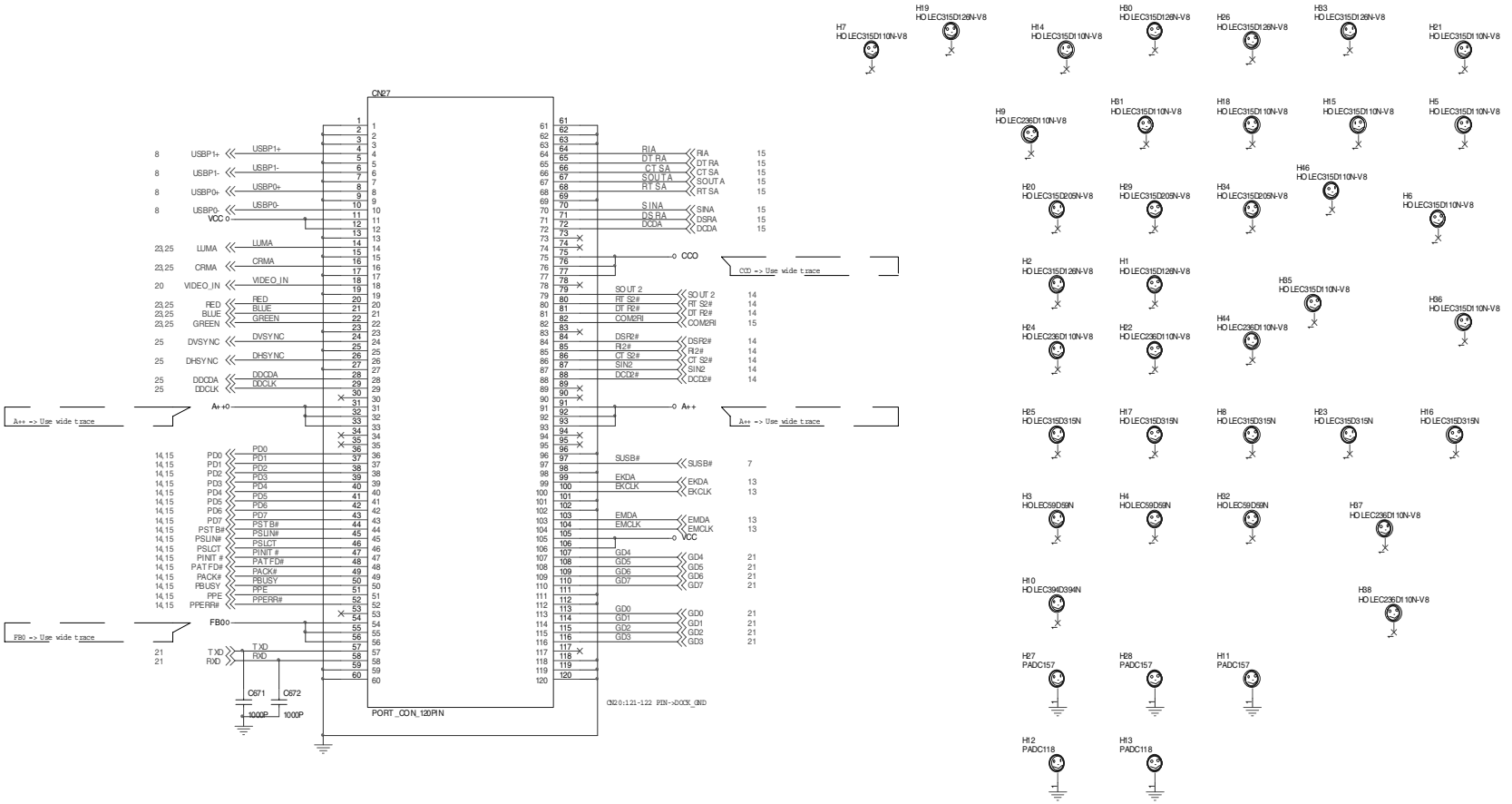
Date: Friday, October 20, 2000		Sheet 25 of 37	



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Size	Document Number	Rev
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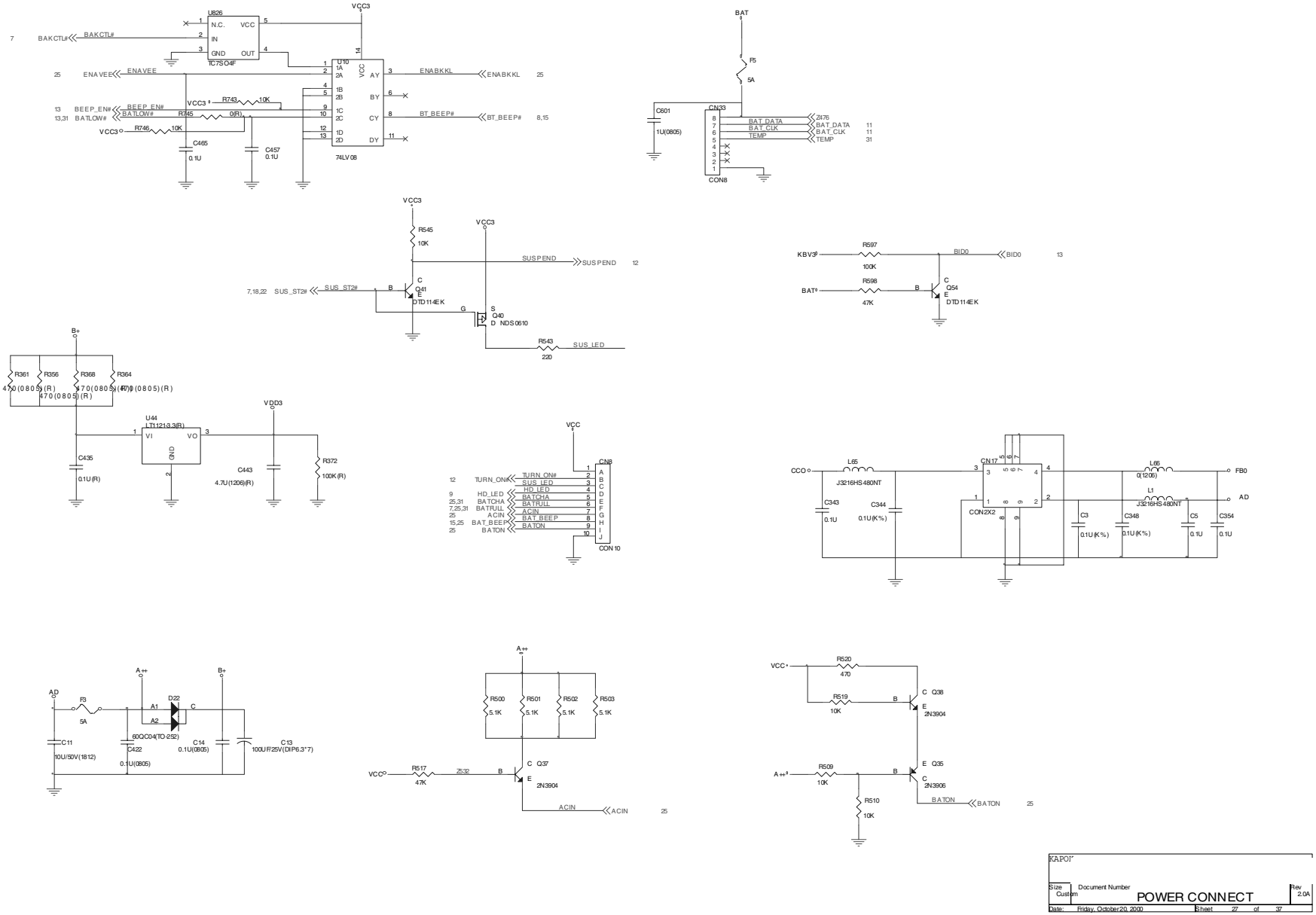

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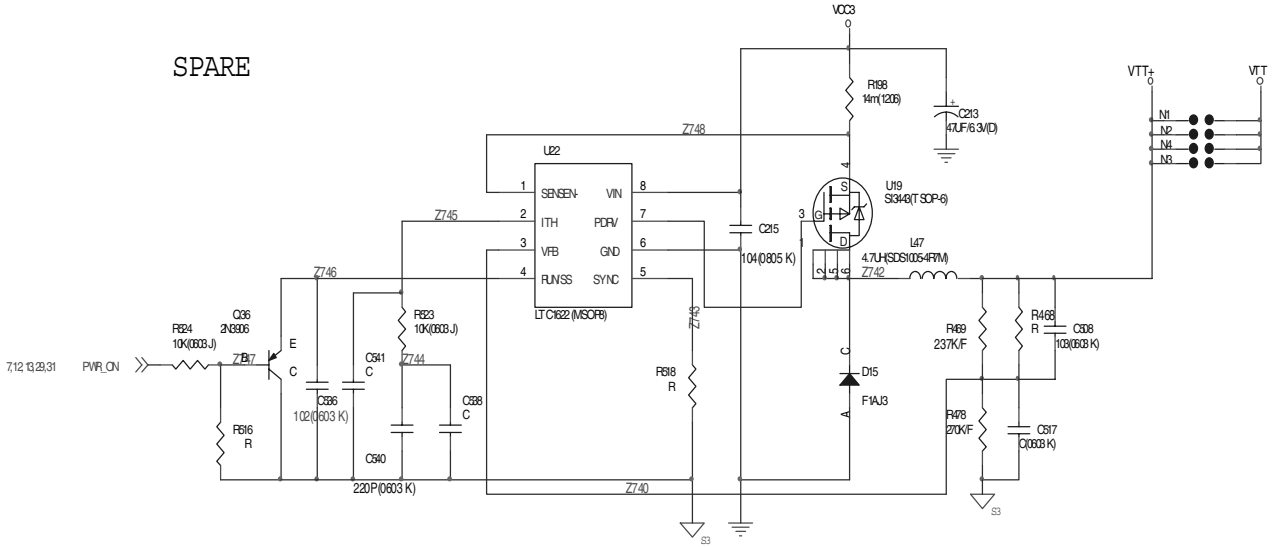
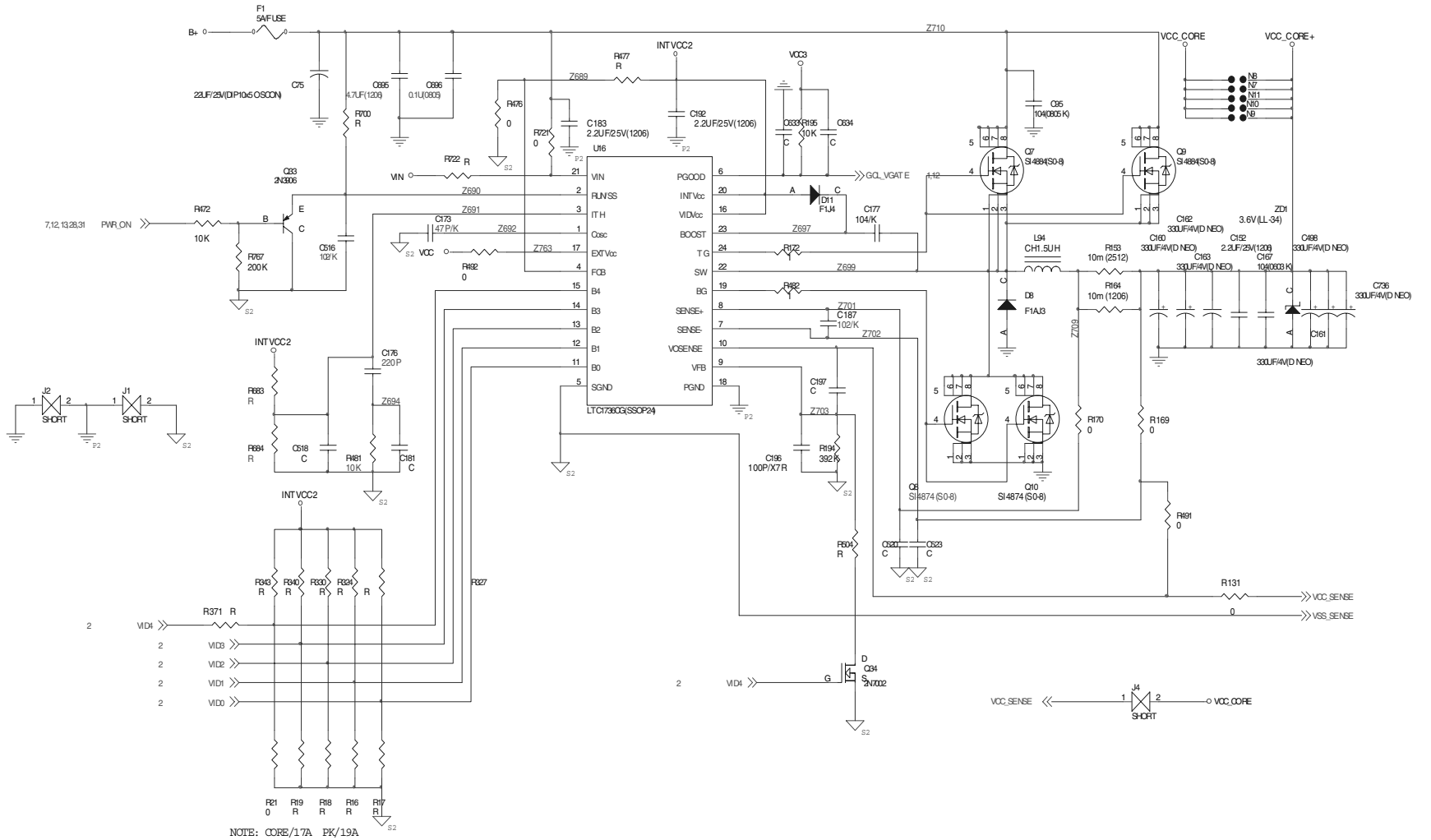
Size: Custom	Document Number: POWER CONNECT		Rev: 2.0A
Date: Friday, October 20, 2000	Sheet 27 of 37		



	8500V	
Size: Custom	Document Number: VTT	Rev: 1.0A
Date: Friday, October 20, 2000	Sheet 28 of 37	



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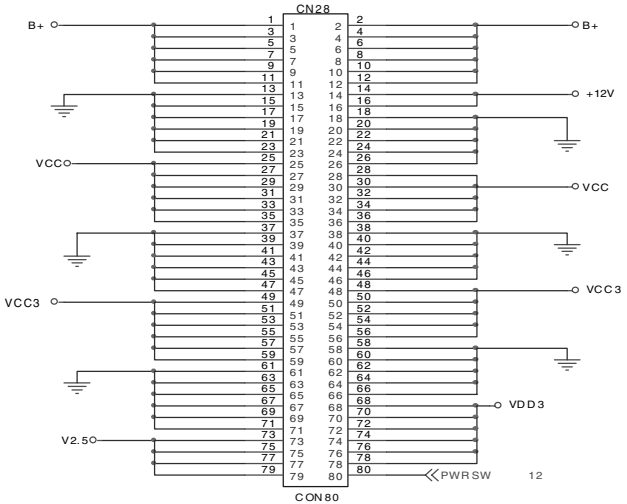
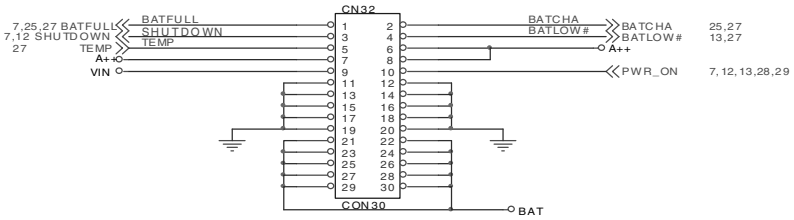
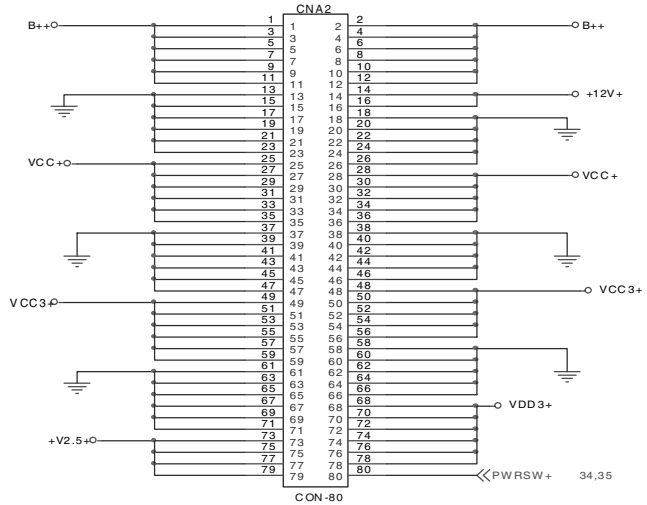
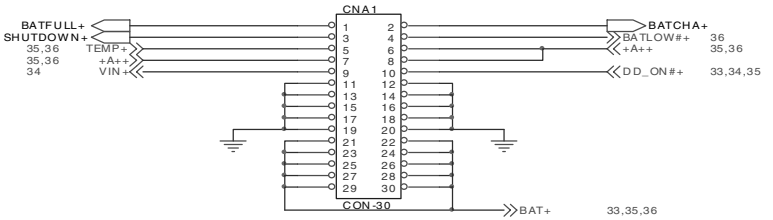
Size: Custom	Document Number: POWER CORE	Rev: 1.0A
Date: Friday, October 20, 2000	Sheet: 29 of 37	

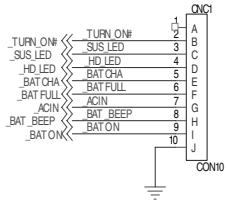


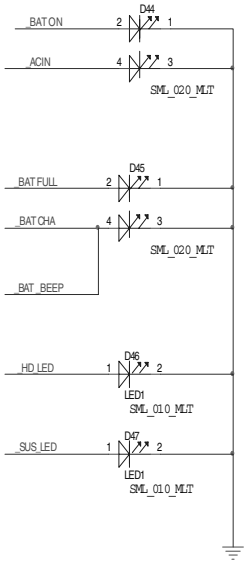


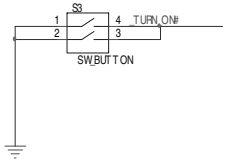




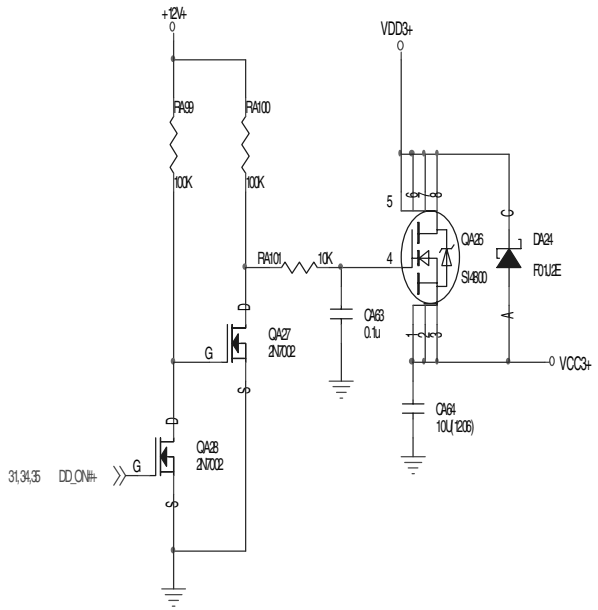
Title: 8500V		
Size: A3	Document Number: CONNECTOR	Rev: 1.0A
Date: Friday, October 20, 2000	Sheet 31 of 37	

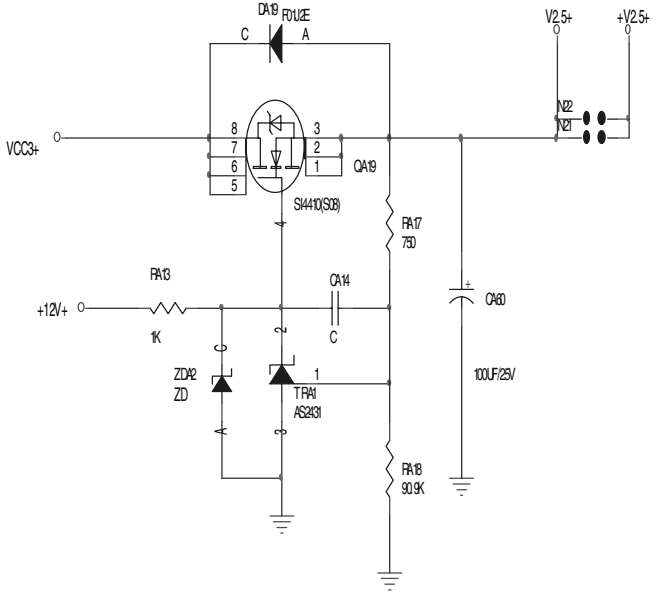


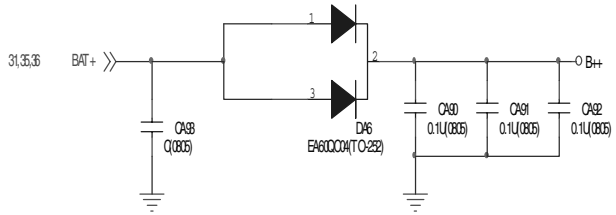




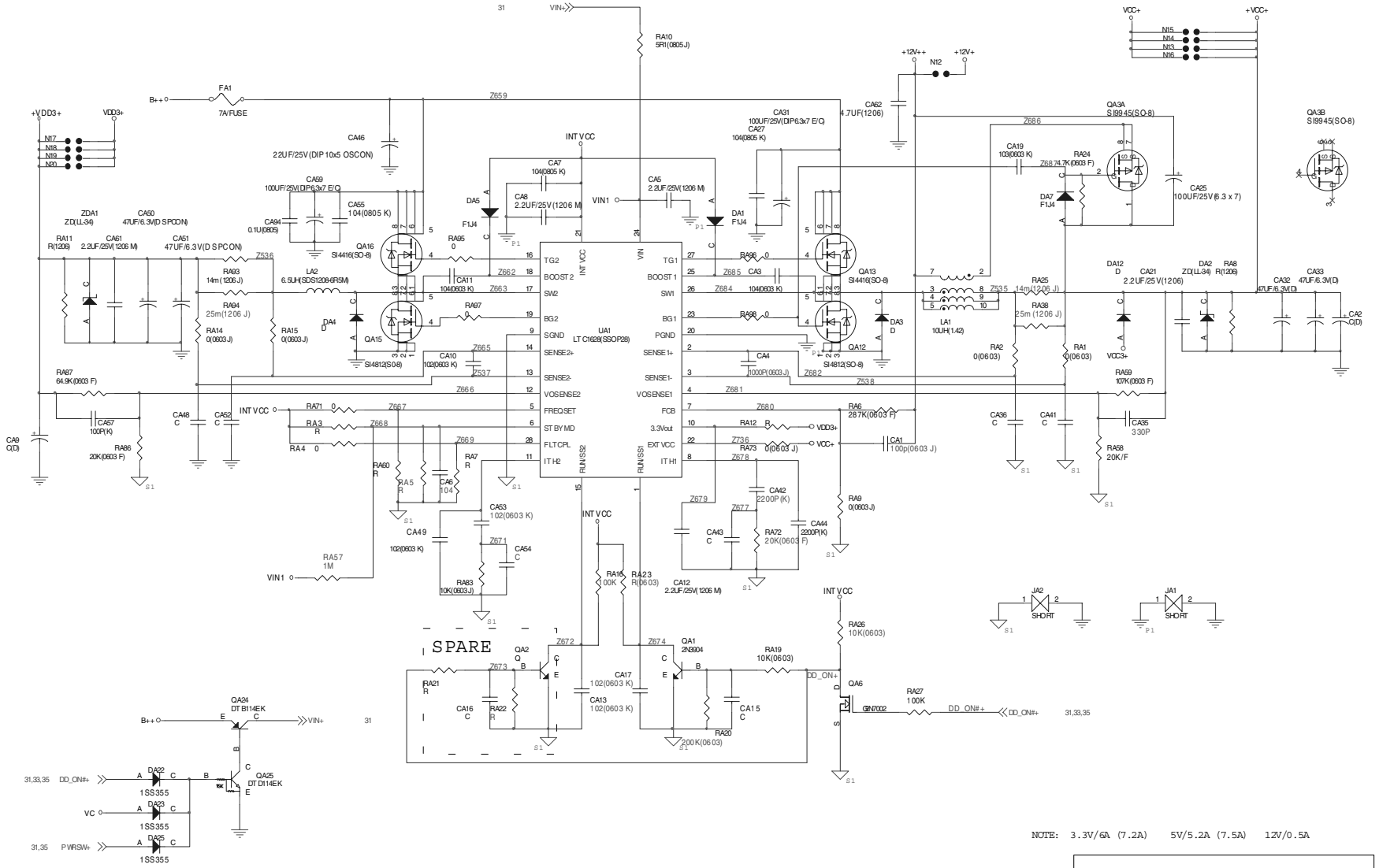
KAPOK COMPUTER CO.		
Title: LED_BOARD		
Size: Custom	Document Number: LED_BOARD	Rev: A
Date: Friday, October 20, 2000	Sheet 32 of 37	

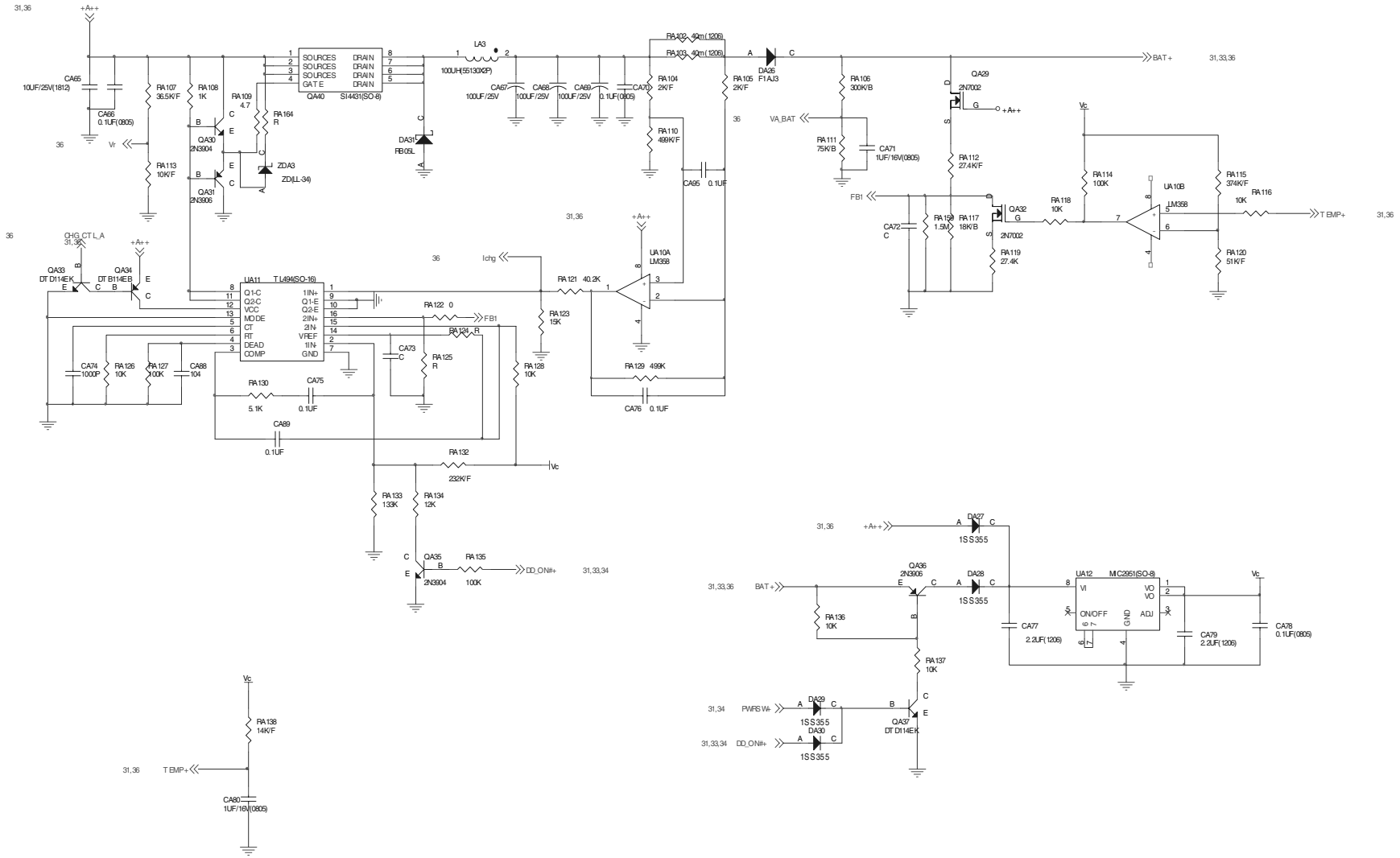






8500V		
Title: 8500C POWER		
Size: B	Document Number: VCC3 & 2.5V	Rev: 1.0A
Date: Friday, October 20, 2000	Sheet 33 of 37	


UA1
LTC1628(SSOP28)
INT VCC
VIN1
VIN+
B++
+VDD3+
VDD3+
+12V++
+12V+
VCC+
+VCC+
VCC3+
VDD3+
SPARE
QA16 SI4416(SO-8)
QA15 SI4812(SO-8)
QA13 SI4416(SO-8)
QA12 SI4812(SO-8)
QA3A SI9945(SO-8)
QA3B SI9945(SO-8)
QA24 DTB114EK
QA25 DTD114EK
QA1 2N3904
QA2 Q
QA6 GN7002
DA1 F1J4
DA5 F1J4
DA7 F1J4
DA4 D
DA3 D
DA12 D
DA2 ZD(LL-34)
DA22 1SS355
DA23 1SS355
DA25 1SS355
LA1 10UH(1.42)
LA2 6.5UH(SDS1208-6R5M)
FA1 7A/FUSE
JA2 SHORT
JA1 SHORT
DD_ON+
DD_ON#+
PWRSW+
VC
NOTE: 3.3V/6A (7.2A) 5V/5.2A (7.5A) 12V/0.5A
8500V
77-85V0C-D01A
Document Number VDD & VCC3
Rev 1.0A
Friday, October 20, 2000
Sheet 34 of 37



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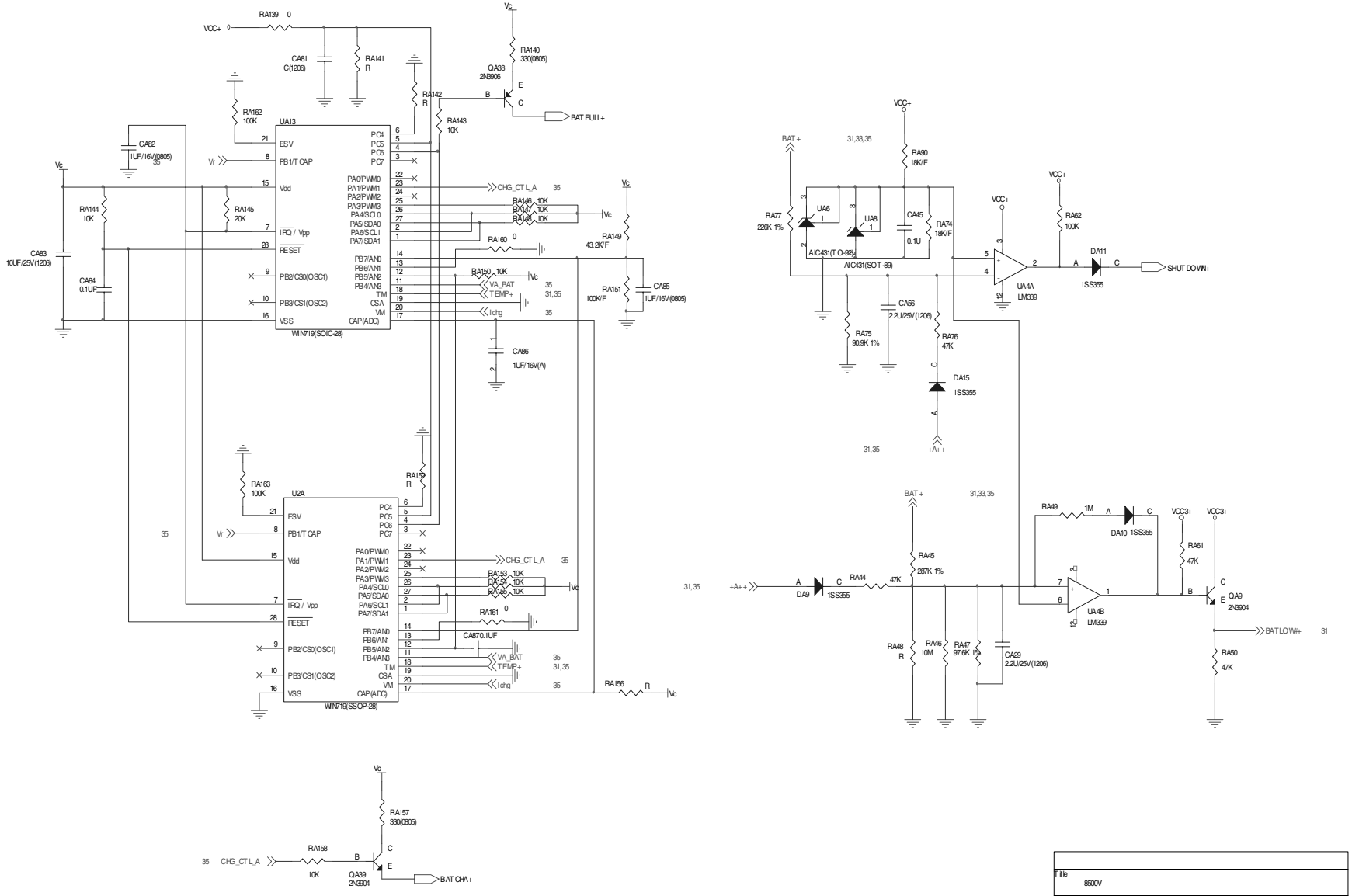
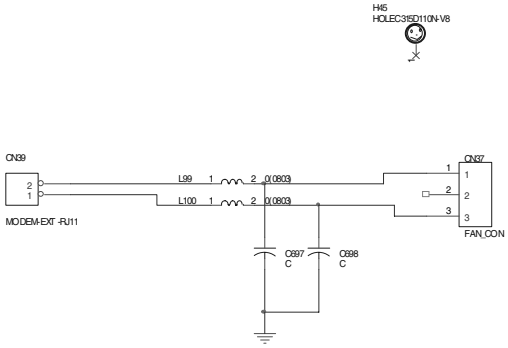
Size A3	Document Number CHARGE1	Rev 4
Date: Thursday, December 07, 2000	Sheet 35 of 37	



Title	8500V	
Size A3	Document Number CHARGE2	Rev 1.0A
Date: Friday, October 20, 2000	Sheet 36 of 37	



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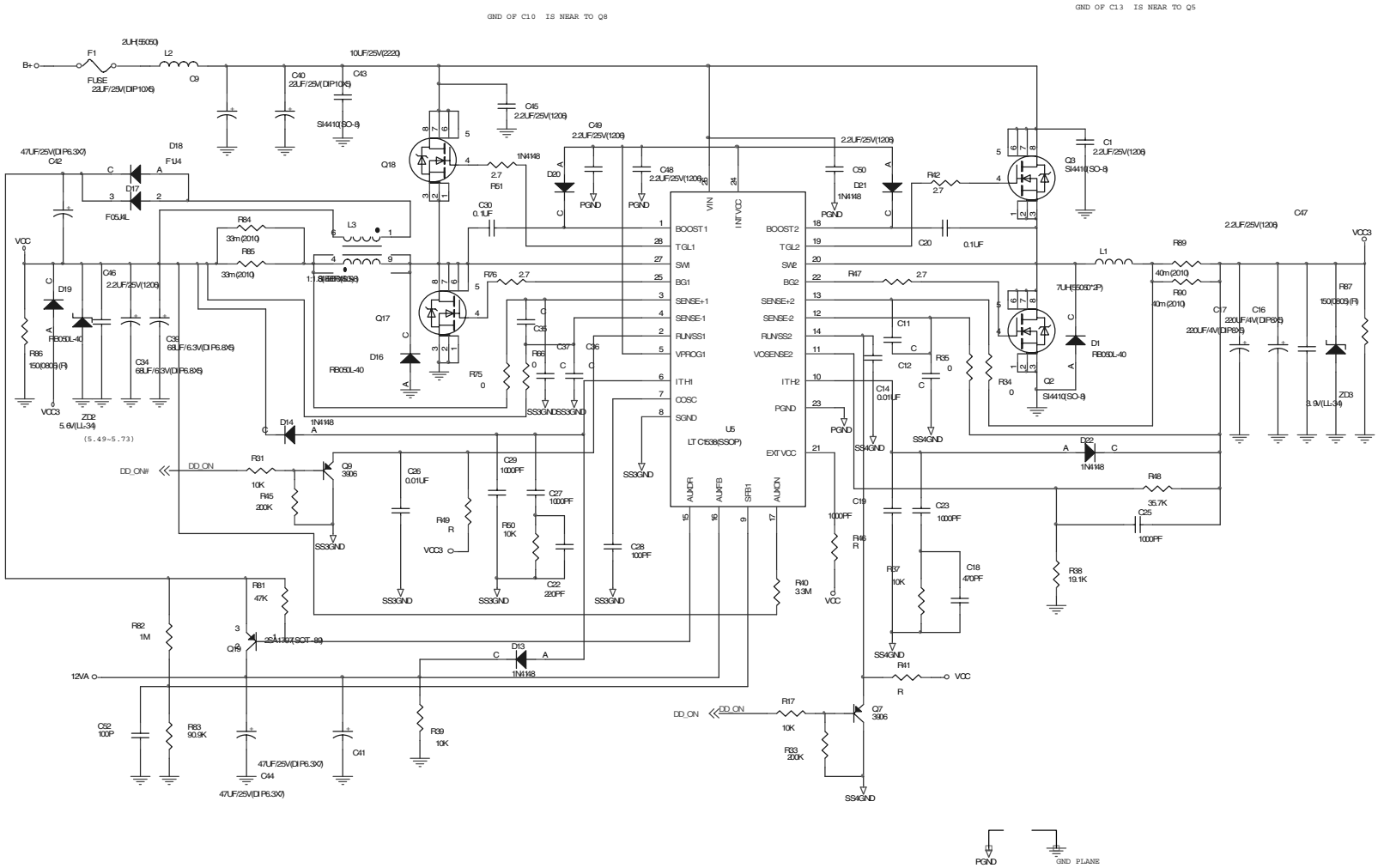
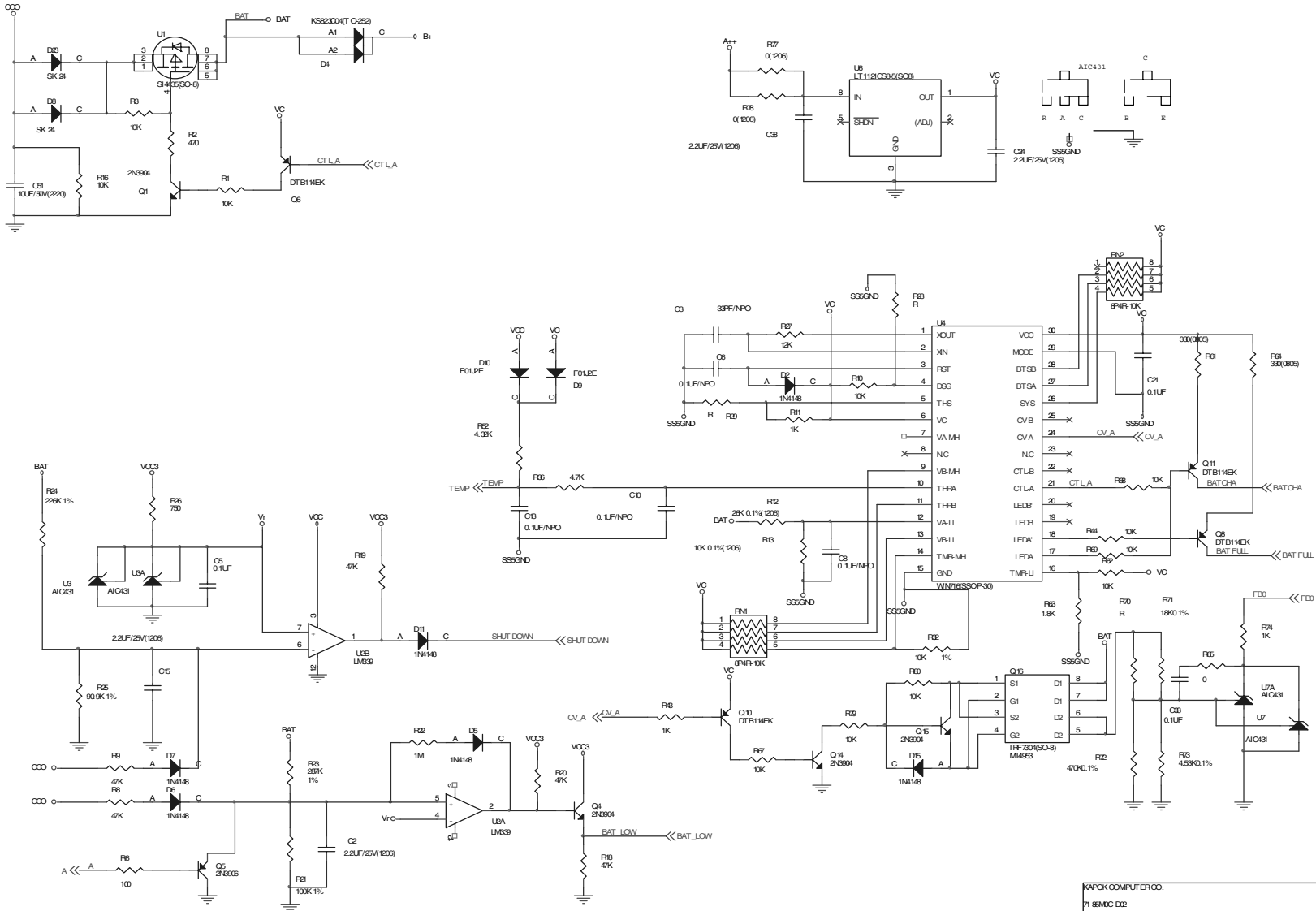
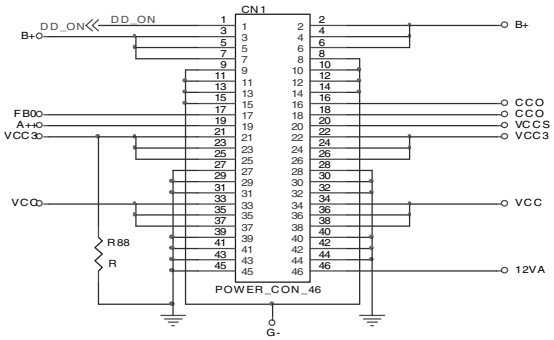
Size: Custom	Document Number: RJ-11		Rev: 2.0A
Date: Friday, October 20, 2000	Sheet 37 of 37		

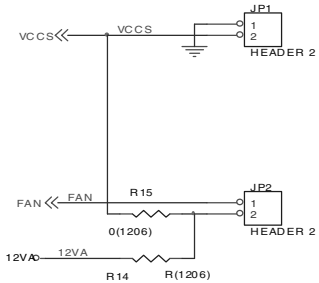


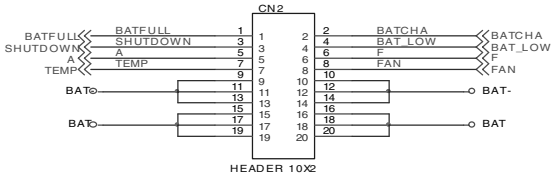
KAPOK COMPUTER CO.		
71-85MDC-D02		
Title: 8500M SYSTEM POWER REGULATORS		
Size: B	Document Number: 85MDD-02.SCH	Rev: A
Date: Friday, September 15, 2000	Sheet 1 of 3	



KAPOK COMPUTER CO.		
71-85M0C-D02		
Title: 8500M CHARGER		
Size: B	Document Number: 85MCHAR2.SCH	Rev: A
Date: Friday, September 15, 2000	Sheet 2 of 3	







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